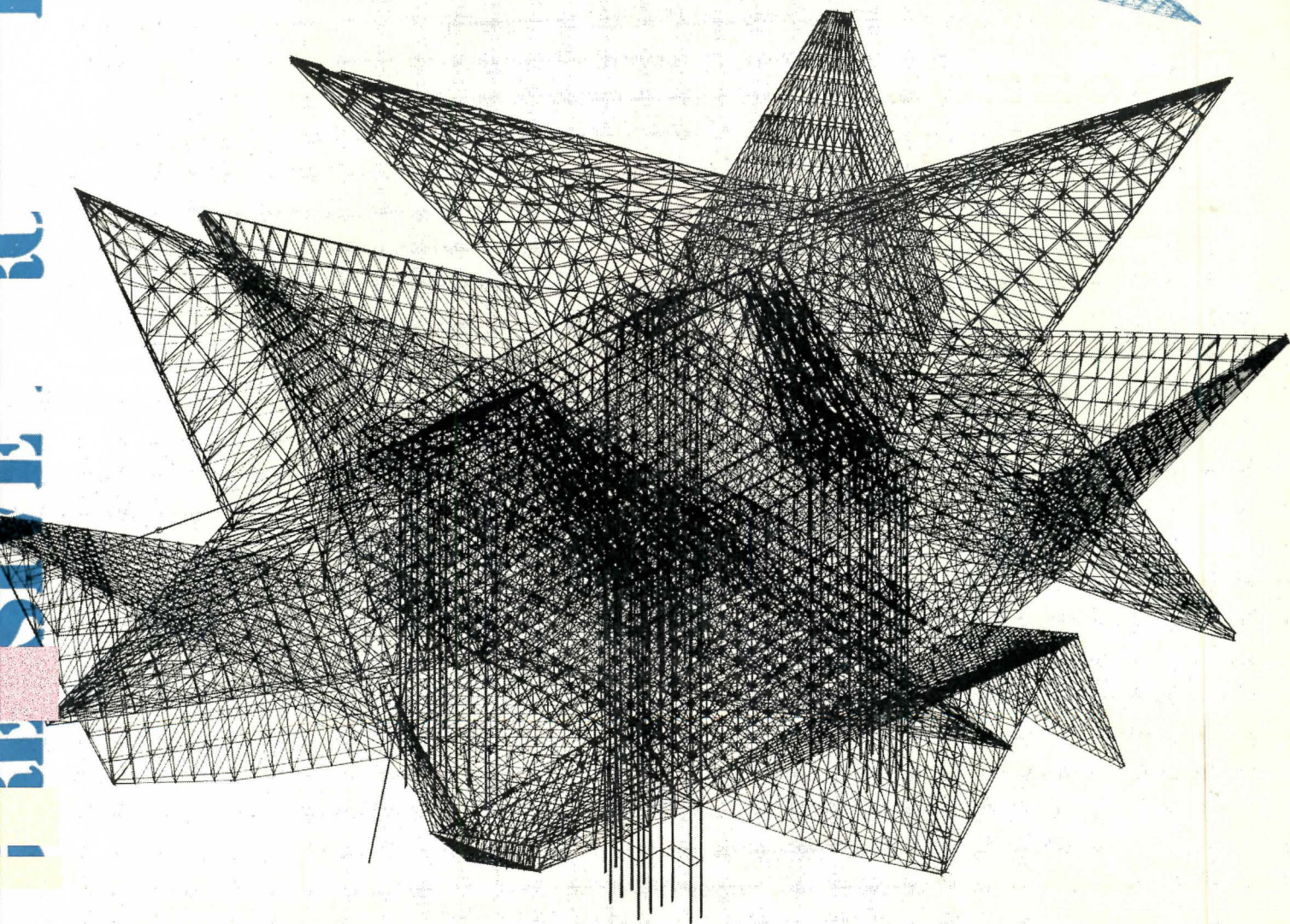
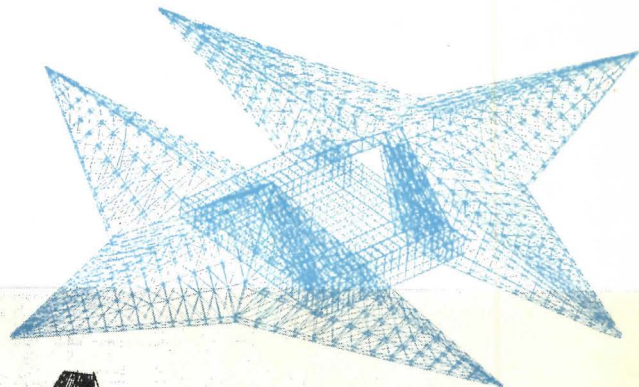
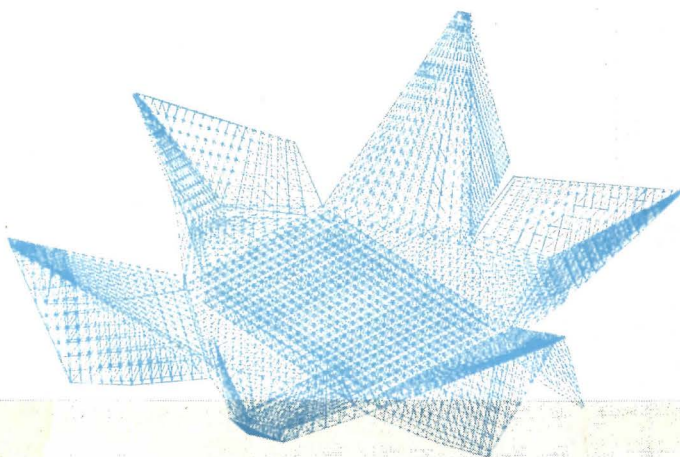


p/a

february 1958

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the architect and his community



Palm Beach Towers Hotel, Palm Beach, Fla.; Arch.—John Hans Graham & Assocs., Washington, D. C.; Struc. Engr.—Oboler & Clarke, Miami; Consltg. Engr.—Norman C. Schmid & Assocs. Palm Beach; G. C.—Taylor Construction Co., Miami; Pozzoloth Ready-Mixed concrete—Burnup & Sims, and Rinker Materials, West Palm Beach.



Thunderbird Motel, Miami Beach, Fla.; Archt.—Norman Giller & Assocs., Miami Beach; Contr.—Taylor Construction Co., Miami; Engr.—Jules Channing, Miami; Pozzoloth Ready-Mixed concrete—Maule Industries, Inc. & Acme Concrete Corp.

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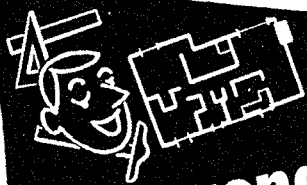


Eden Roc Hotel, Miami Beach, Fla.; Archt.—Morris Lapidus, Miami Beach; Engr.—H. J. Ross Assocs., Miami; G. C.—Taylor Construction Co., Miami; Pozzoloth Ready-Mixed concrete—Maule Industries, Inc.



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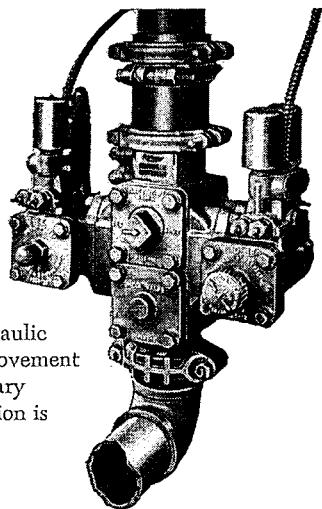
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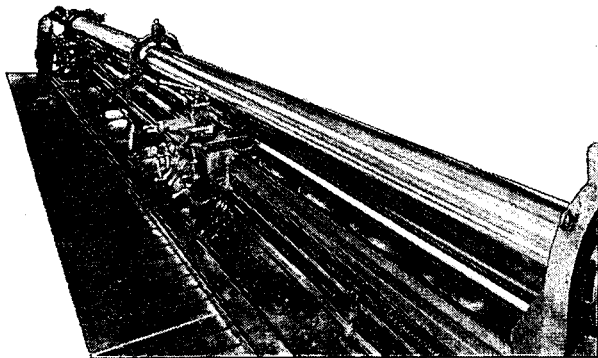
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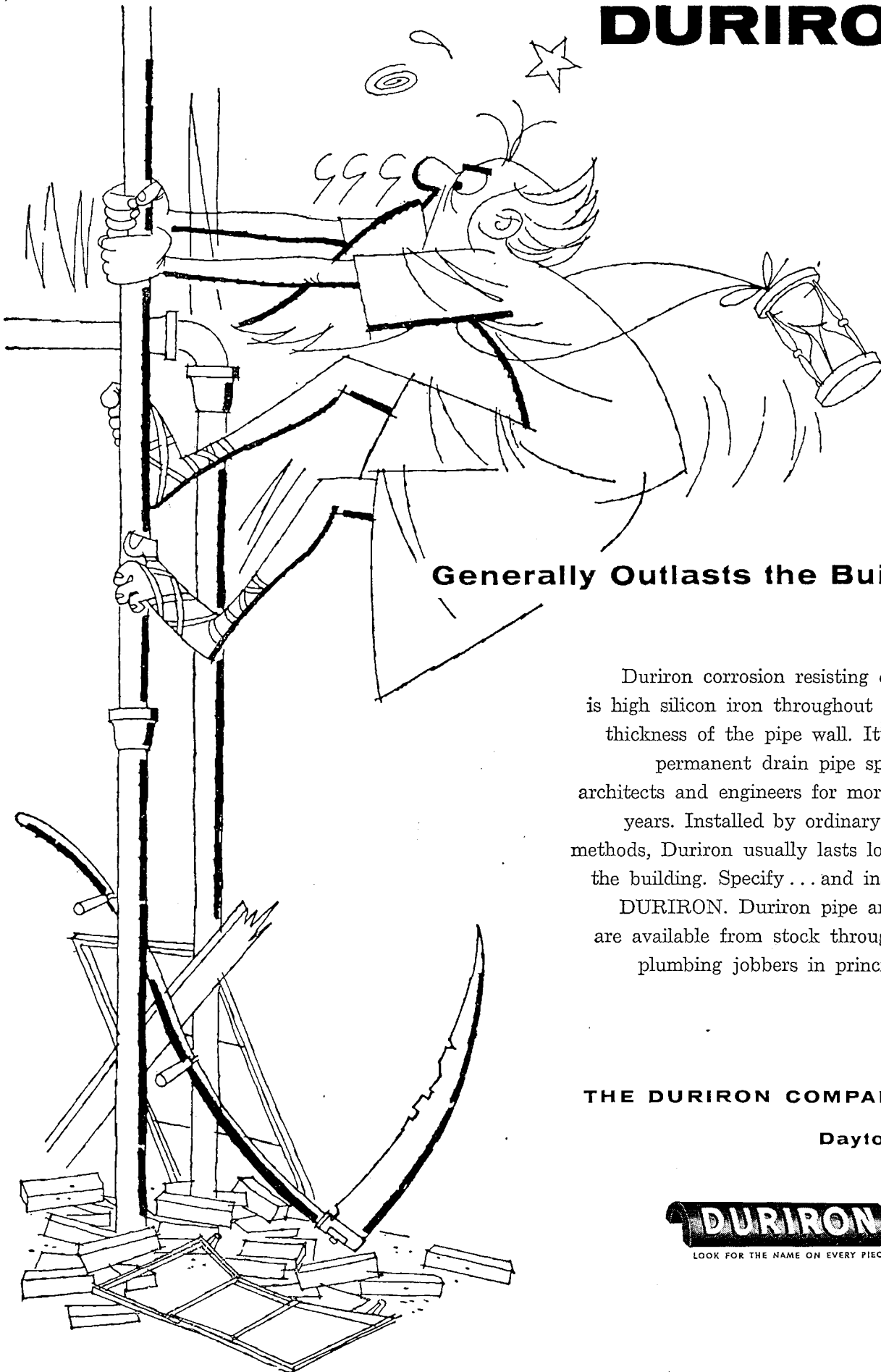
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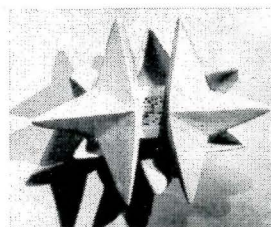
office practice

p/a news survey

**progressive architecture
in America**

selected details

interior design data



Structural Analysis for Corregidor-Bataan Memorial Competition Submission by Architects Associated with Nivola, Strauss, Raspante, Scofidio, Weidinger and Salvadori. Drawing by Ricardo Scofidio.

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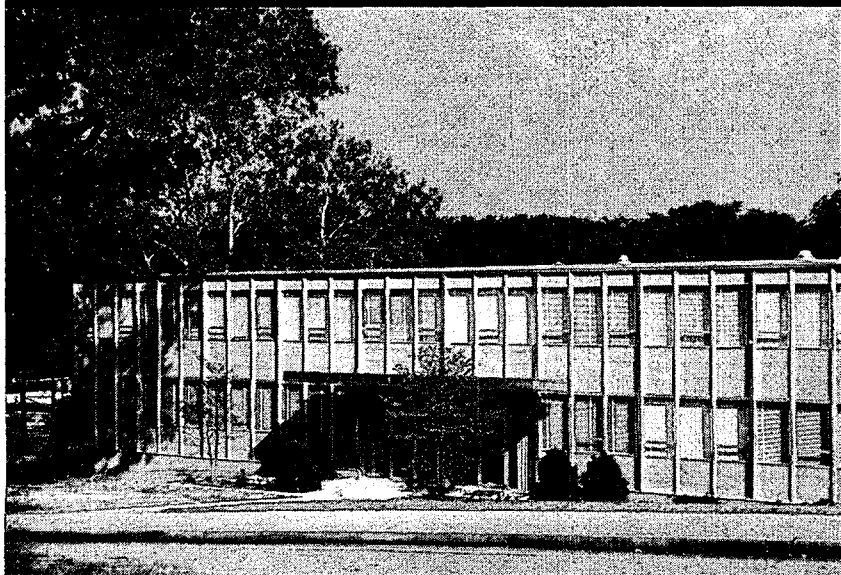
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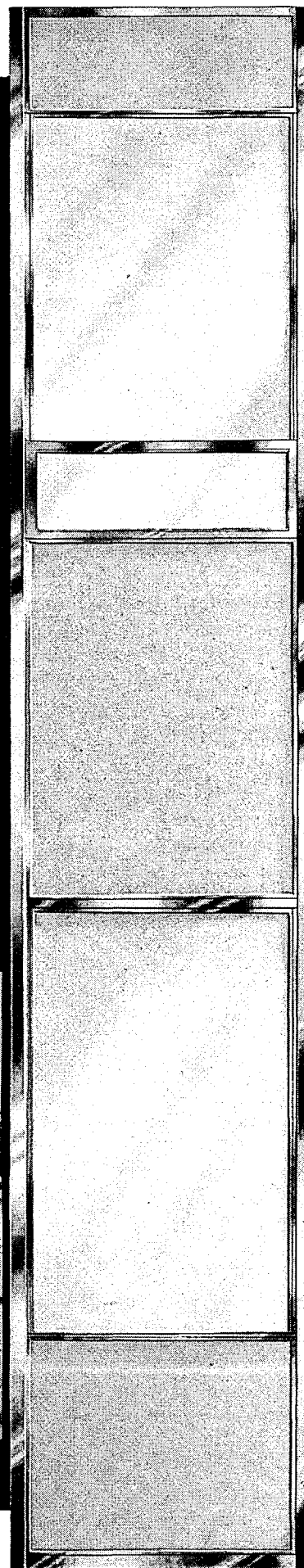
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It's the Law by Bernard Tomson

P/A Office Practice article discussing: What is the legal and ethical position of an architect whose associate becomes involved in a dispute with the owner?

This column (IT'S THE LAW, AUGUST 1956 P/A) has discussed the right of one associated architectural firm to obtain arbitration of a dispute with the Owner without the consent of another associated architectural firm. The dispute referred to in that column has now been determined by arbitration and many of the arbitrator's findings are of interest in respect to the respective obligations and rights of associated Architects, Owner, and Contractor.

We previously reported that a Board of Education entered into a contract with Architects "A" and "B," in association, for the purpose of furnishing plans, specifications, and supervision for the construction of a school building. The agreement between Architects "A" and "B" provided that Architect "B" was to furnish the working drawings and Architect "A" was to supervise construction. During the process of construction, Architect "A" became involved in a dispute with the Contractor and refused to issue a certificate of payment on the ground that certain requisitions were not correctly valued and that the work had not been properly performed. The contractor threatened to terminate his contract and filed a claim for damages against the Owner. The Owner eventually discharged Architect "A" and made a substantial payment to the Contractor. Architect "B," who had furnished the working drawings, thereafter took over the supervision of the project.

Architect "A" requested Architect "B," his associate, to join with him in a demand for arbitration against the Owner claiming that the contract had been breached by the Owner. Architect "B" refused. The New York Court of Appeals eventually ruled that Architect "A" was nevertheless entitled to an arbitration of the dispute which had arisen between the Owner and himself.

In the arbitration which followed, Architect "A" broadened his claim not only to include the alleged damages sustained by reason of the action of the Board of Education but included any claim against his associate, Architect "B." Architect "B" did not make any claim except as an offset against any claim that might be made against

him by Architect "A." The Board of Education claimed damages against both Architects "A" and "B" based upon the additional monies the Board had been required to pay to the Contractor in order to obtain the Contractor's agreement to complete the job. Although the provision of the contract between the associated Architects and the Owner merely provided for arbitration of disputes between the said Architects and the Owner, the arbitrator ruled that the clause was sufficient to cover any dispute between the associated Architects themselves.

According to the findings of the arbitrator, the Contractor was approximately two months ahead of schedule when differences developed between him and Architect "A." Architect "A" advised the Board of Education that the Contractor's work was defective and refused to issue a certificate for certain progress payments. The Contractor admitted the defects to others but according to the arbitrator was quick to take offense at Architect "A's" methods which the Contractor claimed were arbitrary. The Contractor served a seven day notice of termination of contract because of the failure of the Board to pay his requisition and he cut his force on the job from 55 to 10 men. Subsequently, the work came to a complete halt. The Contractor advised the Board of Education that he planned to correct the defective work but that he could not work with Architect "A" and suggested that Architect "B" take over supervision. Architect "B" however suggested that a third disinterested party undertake supervision. The Board initially adopted a resolution expressing confidence in the architects but was unsuccessful in attempting to adjust the difficulties which had arisen.

The Board of Education brought in an outside architect and engineer of outstanding reputation for the purpose of trying to get the parties together. This outside architect inspected the work and came to the conclusion that the Contractor had done a reasonably good job and that the difficulties listed by Architect "A" were minor and could be corrected for approximately \$3000. The suggestion was made that due to the difficulties which had arisen between the Contractor and Architect "A," supervision be turned over to the associated Architect "B." Architect "A" refused to accept this suggestion stating that the Contractor alone was at

fault and that if necessary his contract should be terminated and rebid. On the other hand, the Contractor took the position that he would never return to the job if Architect "A" had anything to do with it.

The outside architect who had been brought in for mediation purposes informed the Owner that the failure to pay the Contractor's requisition was, in his opinion, a breach of contract and that there would be a great loss of time and money if the contract was relet. The Board of Education thereafter entered into a supplemental agreement with the Contractor not only agreeing to pay him his requisition but in addition thereto to pay that Contractor any losses sustained because of the delay and reactivation of the work. The Board of Education also passed a resolution requiring Architect "A" to discontinue all further direct connection with the work. Architect "B" then took over supervision of the project.

In pointing out the duty of a supervising architect, the arbitrator stated:

"In a contract of this kind, the supervising architect acts as the agent of the Owner in some matters, but in other matters he acts as the arbiter between the Owner and the Contractor. When acting in this latter capacity, he must be careful to govern his conduct by judicial standards. This is clearly explained in *Architectural & Engineering Law* by Bernard Tomson (page 181).

The arbitrator concluded that Architect "A" was not wrongfully discharged and was therefore entitled to no damages. On the other hand, he also ruled that the Board of Education was entitled to no damages against Architects "A" or "B". In respect to Architect "B" the arbitrator was of the opinion that he was the "innocent third party in this whole transaction."

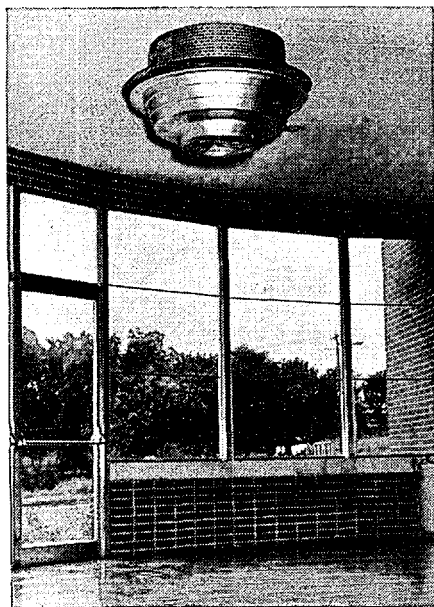
Respecting the claim of the Board against Architect "A," the arbitrator ruled that the Contractor was partly responsible for the dispute which had arisen and for the delay occasioned by such dispute and that Architect "A" should not be held responsible for the settlement which the Board made with the Contractor which was "dictated more by expediency than what might have been strictly due the contractor." Would all or some of the problems here have been avoided if the architect had been made the final arbiter of all disputes arising out of the construction contract?

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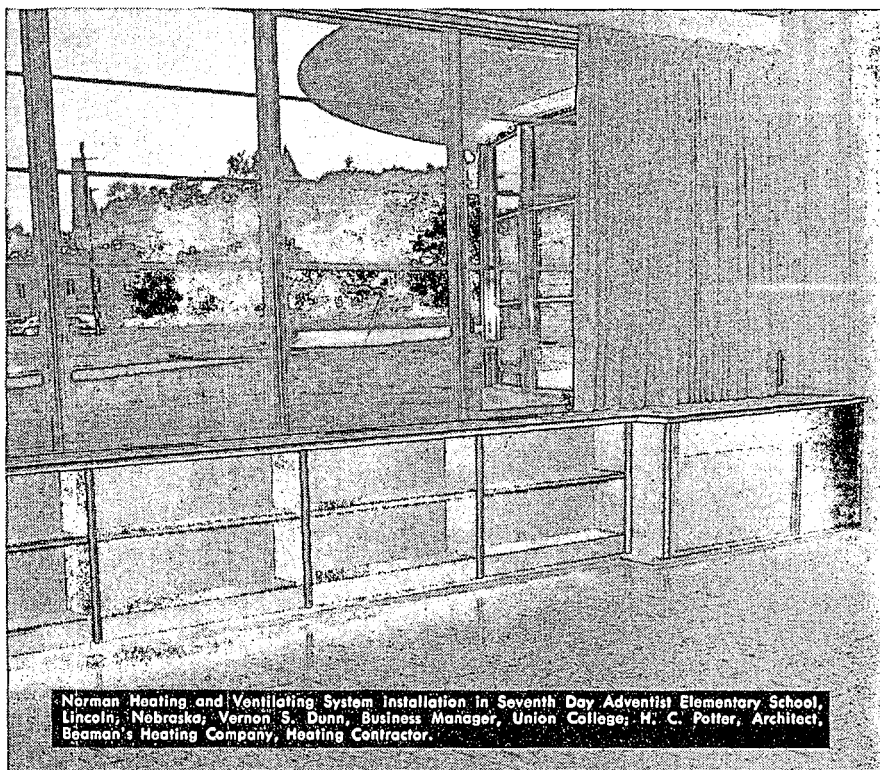


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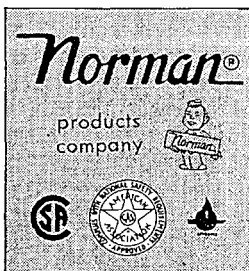
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Mechanical Engineering Critique by William J. McGuinness

P/A Office Practice column on mechanical and electrical design and equipment, devoted this month to planning hospitals for economical heating.

Good insulation and double glazing in hospitals can cut the size of radiators and boilers in half, and make a similar reduction in annual fuel bills. These are broad claims, but when they are made by Charles F. Neergaard,* for many years one of the nation's leading hospital consultants, they carry considerable weight. Neergaard's interest is the improvement of comfort and economy in all hospitals, and he has records to back his statements. Issued recently through a number of sources, including *The Modern Hospital* and *Heating, Piping and Air Conditioning*, his information is convincing. The table of comparisons, shown below, is from his broad experience. It has been verified by recent official audits of operating costs. He has had a voice in the planning of all the hospitals listed. In most cases his advice on heating has been accepted and the good results are evident. In some other cases his recommendations were not followed by the owner and engineer and the poor results are equally clear.

Neergaard and his associate, Charles E. Daniel, have long had a yardstick for the scrutiny and judgment of hospital heating systems. They have continually stated that in a well planned and well insulated building, one sq ft of radiation will take care of about 160 cu ft of building volume, while with poor thermal planning it may only serve about 80 cu ft. This kind of standard can only be developed in a broad practice, but it should be applied to all proposed work. The portfolio of investments for hospital funds is very carefully studied by trustees; too frequently, however, the plans for a new building are not scaled against the best performance of structures currently operating.

The table shows how well these results of good planning can be achieved. For instance, the walls in the best examples (A, B, and C), were 12 in. of brick, a 2 in. air space, 3 in. of wood fiber, and a layer of plaster. The roof had similar insulation; glass was double. With poorer insulation, or none, and single glass (I, J, K, and L), one sq ft of radiation took care of less than the standard of 80 cu ft assigned to poor buildings.

*Now retired from active practice.

The Bethlehem Pavilion (A) makes use of another item of good thermal planning to achieve its top efficiency rating. It uses the two-corridor plan; the 14 ft utility strip between the corridors is not in contact with the exterior surfaces. Thus it comprises a large volume with no heat loss. Had a single corridor been used, the utility rooms would have outside exposure and would have required heating.

Neergaard makes a strong case against the strange complacency that permits the acceptance of U-factors in the range of .2 to .3 (uninsulated masonry) for the walls of large buildings like hospitals, when .09 is a common standard for frame residences. One can understand how it happens, however, when it is considered that 2 or 3 in. of mineral wool fits easily into a 3½ in. stud space, whereas the same thickness of insulation plus an air space adds many inches to an already thick masonry wall. For instance, the wall used in case A totals 17¼ in. which is not very desirable architecturally in skeleton construction. Yet corrections are not always made in the similar walls of panel construction. He points out that in a recent report on stainless-steel building panels, six of them had U-factors ranging from .11 to .16 and nine others from .18 to .24. A total of 3 in. of fiber board, which is an addition of 2 in. to the usual 1 in. of building panels would have assured the .085 U-factor which he considers optimum. The thickness of the walls would have been increased only 2 in. Another example of the lack of emphasis on thermal resistance

was seen in a recent paper on *The In-Place Cost of Walls*, by a leading contractor. Walls used in 11 buildings were described in detail, but with no reference to U-factors.

The relative amount of glass is an important item in thermal economy. Of the several buildings showing good results in the table, the area of glass represented about 30 percent of the building surface. Areas greater than this generally demand panes which are very difficult and expensive to double-glaze. Excessive glare and chill, both unpleasant to patients, are given as reasons, other than economic, for the limiting of glass areas.

Air conditioning is being considered in many new hospital plans. When it is chosen, good thermal planning can reduce considerably the installation and operating costs. Even when air conditioning is not installed, the rooms can be much cooler than if insulation had been minimized or omitted. Week-long summer tests in three hospitals have shown that well insulated buildings average 8F cooler than poorly insulated ones. This contributes greatly to comfort and could offset a large part of the cooling load if air conditioning were installed.

Instead of the conventional steam system, zoned, forced-circulation hot water is favored. In the Prince Edward Island Hospital, water is circulated at a mild 100 F, seldom rising above 130 F in critically cold weather. Radiant heating and cooling have been found excellent, if the dew point of humidity is controlled. The heat pump has also been used successfully.

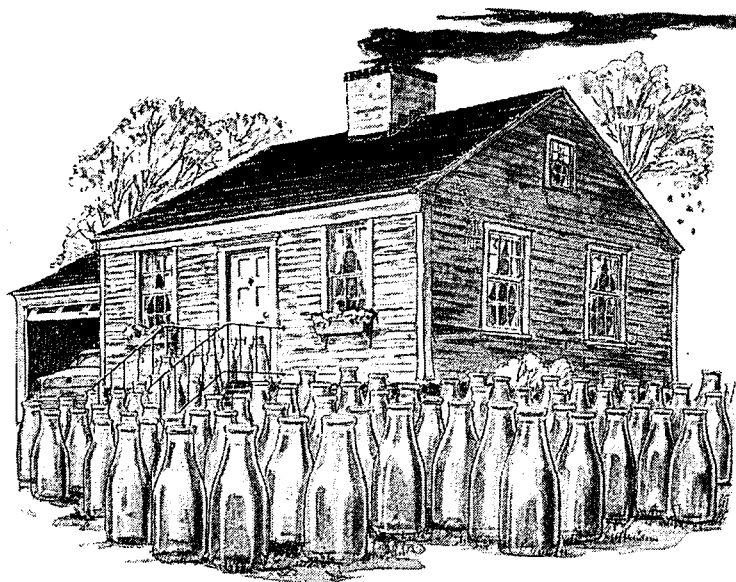
Comparison of the Number of Gross Cu Ft in Insulated Hospitals Heated by 1 Sq Ft of Radiation As Designed by Different Engineers in Different Areas

	Gross cu ft of building	Sq ft of radiation	No. of cu ft to ea. sq ft of radiation	Insulation Walls	Windows	Approx. design temp.
CONSERVATIVE ENGINEERING						
(A) Bethlehem, Pa.	750,000	3,750	200	yes	yes	0 F
(B) Glens Falls, N. Y.	605,000	4,400	137	yes	no	-10 F
(C) Hagerstown, Md.	560,000	3,590	156	yes	yes	0 F
(D) New Haven, Conn.	1,605,000	13,248	121	yes	yes	0 F
(E) Prince Edward Island	550,000	5,100	107	yes	yes	-10 F
(F) Toronto, W.	1,880,000	16,600	113	yes	yes	-10 F
(G) Mount Sinai, Toronto	3,110,197	30,500	102	yes	yes	-10 F
(H) Sick Children, Toronto	5,874,347	55,100	106	yes	yes	-10 F
EXTRAVAGANT ENGINEERING						
(I) Long Island	514,000	7,320	70	yes	no	0 F
(J) New Jersey	425,000	6,600	65	no	no	0 F
(K) Virginia	1,137,521	23,813	47	yes	no	+10 F
(L) New York City	2,500,000	49,500	43	yes	no	0 F

A, B, C, D, F are additions to existing hospitals. All others are complete new hospitals. G, H, and L buy metered steam from hospital centers and have no boiler plant.

76 Quarts of Actual Water

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... in the form of 152 lbs. of
WATER VAPOR

Here's the breakdown for a family of 4 per week

	VAPOR
Breathing and Perspiring (2 oz. per person per hr.)	51.0 lbs.
Showers (½ lb. per bath)	14.0 lbs.
Washing Clothes	4.3 lbs.
Drying Clothes Indoors	26.0 lbs.
Cooking (Gas) (4.7 lbs. daily)	32.9 lbs.
Ordinary Dish Washing (1 lb. daily, automatic much more) ..	6.0 lbs.
Mopping (100 sq. ft. daily, 3 lbs.)	18.0 lbs.

TOTAL WEEKLY VAPOR 152.2 lbs.
or 76 quarts

In addition, each 1,000 sq. ft. of soil under a building may produce 96 lbs. of water vapor DAILY.

NO WONDER TIMBER ROTS — PAINT PEELS — PLASTER CRUMBLES — STEEL BEAMS RUST!

Because vapor has slight density, about 1/205,000th the density of water at 32°F and 1 millionth at zero degree F., it passes through brick, stone, plaster, etc. Most building materials, even asphalt paper, are *porous* to vapor.

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The U. S. National Bureau of Standards has published an informative booklet describing the destruction that condensation can cause, and means of its prevention. It is entitled "Moisture Condensation in Building Walls". Send us the coupon for a FREE copy.

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TYPE 5	C.081=4"	C.034=9¾"	10¢ sq. ft.
TYPE 6	C.068=4½"	C.034=9¾"	11¢ sq. ft.
TYPE 9	C.043=7¾"	C.029=11¼"	16¢ sq. ft.

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†Calculated on basis of limiting thermal values cited in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a.

‡Approximate cost, material and labor, new construction betweenwood joists.

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The Fontainebleau Summer Course by Edmond A. Pachner

P/A Office Practice article describing one architect's experience in the search for continuing professional education.

The American schools of architecture are failing in their duty to the profession, in their refusal to provide adequate facilities for further study for practicing architects.

Each year, perhaps each month, there are dozens of seminars for doctors somewhere in the country. Every summer there are scores of music festivals, attended not only by young hopefuls, but by successful and famous performers, both to teach and learn. Actors, insurance salesmen, building inspectors, members of every profession which takes itself seriously, seek and find advanced training to fit themselves better for the performance of their work. Strangely, in the most complicated of all professions, architecture—this opportunity is conspicuous by its absence.

Because of a promising practice and a deficiency in architectural education, about three years ago I started a search for a curriculum of one or two months each year which I hoped would help to raise the quality of my design. I wrote to a dozen outstanding architectural schools, to *PROGRESSIVE ARCHITECTURE*, which was kind enough to publish my letter, and to the American Institute of Architects. I spoke to delegates to the AIA Convention in California. From all this correspondence and conversation, the only conclusion to be reached was that the self-satisfaction of the profession and the unwillingness of the average practitioner to improve himself were eclipsed only by the refusal of the universities to provide the means, other than the standard course.

Only one ray of light showed through. It seems a well kept secret, but the School of Fine Arts in the Palace of Fontainebleau, France, has offered for a number of years a two-month summer course in architecture. The school was started after World War I as a music school for American students, sponsored partly by the French Government and partly by a number of prominent Americans. Later a department of architecture was inaugurated by Jean Labatut, then Director of the School of Architecture at Princeton University, as an adjunct to the graduate school. The directorship has since been taken over by French architects and holds promise of filling a great need.

I have recently returned from attending this summer course. Although there are natural shortcomings to such an abbreviated curriculum, it is worth the consideration of anyone seeking further study.

The present guiding light of the school is Pierre Devinoy, a Paris architect who, at the expense of his young and growing practice, has thrown himself into the work of cutting through the familiar French disorganization and languor to organize and implement a course of study that crams more opportunity for intellectual and esthetic growth into two months than one could expect to find in a year, anywhere else.

The course of study is threefold: design problems, lectures, and tours, all interrelated so that each complements and fulfils the others.

This year, the design problem was one that is uppermost in the minds of all French architects: the design of a new city. The Government of France is earmarking likely sites for new cities. The primary problem was to develop one of these sites, a beautiful plateau overlooking the Seine, about 30 miles from Paris, as a city of 50,000 inhabitants.

A secondary problem was to design the community center with its facilities for commerce, administration, recreation, and cultural activities. A third problem (although given first) was to study the housing of the population, with living units in accordance with the French version of our FHA-minimum property requirements. These units were to be arranged in predetermined proportions for apartment buildings and row or individual houses.

Interspersed throughout the period were lectures and critiques given by many leading architects and city planners, each relating his talk somewhat to the problem at hand. At least once a week, a tour was conducted through projects of architectural interest, either old or new, always with a view toward implementing the solutions to the problem. The newer works were often explained (and sometimes defended) by the architects responsible for them; the older works were explained by the architects in residence. Among the newer works were the University City by Eugène Beaudoin, the Chapel at Ronchamps by LeCorbusier, the UNESCO building by Breuer, Zehruss & Nervi, the Chapel in Le Raincy by Auguste Perret, SHAPE Village by Jean Dubisson, and a number of others. The older works

included the Cathedrals of Chartres, Strasbourg, and Troyes, the chateaux of the Loire, Vaux-le-Vicomte, and the palaces of Versailles and Fontainebleau, to name just a few.

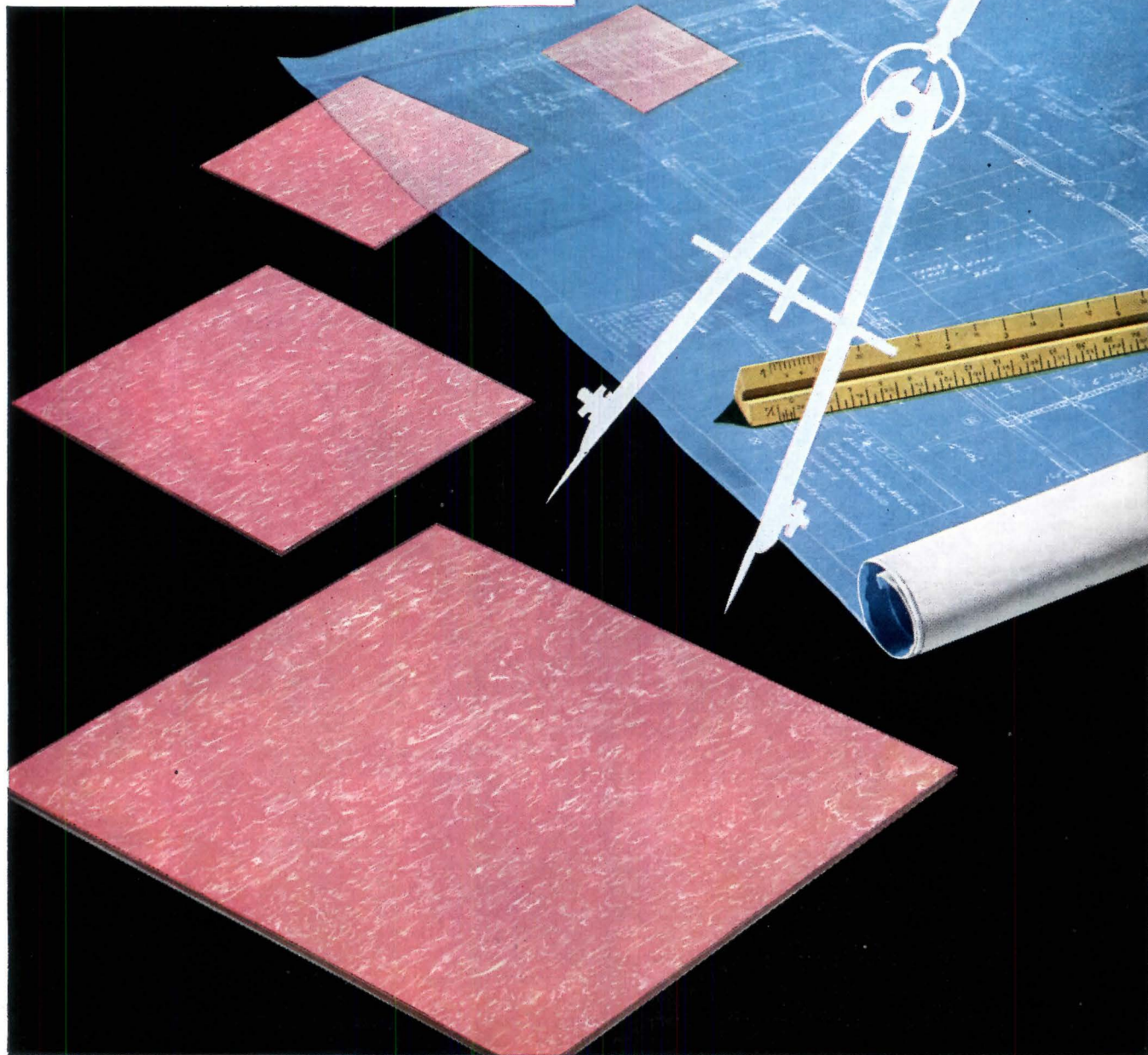
There are naturally many pros and cons to a curriculum of this sort. The pros include the fact that this is an entire package deal, flying from New York via KLM to Amsterdam, thence by train to Paris and return by the same route. (This can all be arranged by writing to the Fontainebleau Fine Arts and Music Schools Association Inc., 122 E. 58 St., New York 22, N. Y.) Room and board are provided by the school and if the rooms lack a few of the modern conveniences, the board, in true French tradition, is a monument to what can be done to institutional food in a country famous for its cuisine. The opportunity to meet and work with students from all over our country, and to meet and exchange ideas with architects of a foreign country (most of whom speak English) and to see at first hand the way of life and methods of work is invaluable to those who may in no other way have this opportunity.

As for the cons: they are only of temporary annoyance and will probably soon be eradicated by the forward-looking M. Devinoy. The French lack of organization is traditional. Confusion, changing of lecture times and dates, buses losing their way on tours, incomplete programs, forgotten details of the package tour, led many of the students to underestimate the magnificent effort and accomplishment.

The number of practicing architects attending this year (or perhaps any year) was small: three out of nineteen. They were Kendall Starrat, of Fort Pierce, Fla.; Nina Pence of Klamath Falls, Ore.; and myself. It is conceivable that a growth of this group will improve the operation of the school by the very determination of the students to get the most from the two months.

The profits I received from the experience were real, but not too easily cataloged. I was seeking a clear-cut program of problems and critiques in the esthetics of buildings. Instead I received a concentrated study of community planning, a kaleidoscope of varied architectural philosophies, and an opportunity to see the concrete examples of both. The use of space and scale by city planners of other ages have, for the first time in my life, made me aware of these as architectural entities. It is my hope that this new awareness will show itself in my work.

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Guaranteed or Reliable Estimates—III

by Michael F. Kenny*

P/A Office Practice article continuing the discussion of methods of producing reliable estimates, begun in the June and September 1957 issues of the magazine.

That there are a *need* and a *responsibility* for the architect to design structures to a stated budgetary limitation, depends on whether the client wants it that way. Most clients do, and the architect tries to meet their wishes in his preliminary researches. It is after the job goes into the design stage, when changes and improvements creep in, and the owner perhaps starts asking for more than he did in the beginning, that the design ceases to fit the budget. Later, when bids are opened and found to be too high, the architect can rightly point to price fluctuations, hunger of bidders, as well as to the foregoing reasons why the work will have to be rebid on a revised basis, or the budget upped.

Neither of these courses endears the architect to the owner. He can avoid the unpopularity, save the owner disappointment, himself costly drawing revisions, and the bidding contractors' time and trouble, by remembering that estimating is a specialized service that costs money.

Primarily, the architect is a designer. His task is to give the client the right structure for his needs. When the client asks how much it will cost, the architect is too often on unfamiliar ground, even though design and costs are so closely integrated. He knows that certain types of construction are more expensive than others, that one kind of building costs more per square foot or per cubic foot than another, but, unless he maintains an efficient estimating department, he does not know all the detailed costs that go into the making of a building.

Obviously a client has a right to know the approximate cost of a structure. This the architect can indicate to him in the preliminary discussions by means of cube or square foot costs or other approximate methods, stressing that because a detailed estimate cannot be made at this stage, only the

region of cost can be arrived at. If the client then asks the architect to design for him a building to meet a budgetary limitation, he is asking for something that requires the preparation of a careful analysis, estimated in detail, of different types of construction and design; and continuing cost checks during the preparation of the plans and specifications.

Architects tend to overlook these matters, and frequently try to absorb the cost of the estimate in their fees for the design, accepting it as something they have to do to get the job. This results in poor estimates, with perhaps the work being delegated to the least busy member of the staff, who may be unfamiliar with the techniques of take-off and pricing. Continuing cost checks are omitted altogether.

If the client asks for a *guaranteed* estimate, he is asking for something the architect cannot give, for the only guaranteed estimate is the "package deal" or the contract bid. Certainly an estimate can be made so high it will be above the low bid, but this sort of estimate is worthless for budget purposes. *Reliable* estimates can be made by architects, however, just as they are made daily by contractors, subcontractors, and material suppliers, on all manner of projects. But the architect must take the trouble to learn what is involved.

The difference between a contractor's estimate and most architects' estimates is one of personnel and approach. In estimating, a contractor knows he can make or lose money, so he gives the work to a skilled, highly paid estimator. The estimator makes a detailed take-off of the work his firm will do, computing the cubic yards of concrete, the square feet of formwork, the number of different masonry units, etc., required. These he prices out for both material and labor. Material rates are derived from current material quotations, labor rates from recorded labor productivity, or rates the estimator is reasonably sure can be met. He also gets in touch with one or more subcontractors for each trade he proposes to sub-let. The subcontractors go through the same process as the general-trades estimator, each one computing his own quantities and prices. When the estimate is finally put to-

gether in the general contractor's office, it is safe to assume that every phase of the work has been carefully scrutinized and estimated and carries a competitive price.

Contractors go through this admittedly laborious and expensive process because experience has shown it is the only way to produce *reliable* estimates. Architects may question whether they have to go through an analogous process to furnish a similar estimate. They *must*—because there is no other method.

The architect has the choice of doing the work in his own office, by hiring competent architectural, mechanical, and electrical estimators, or he can use an outside estimating agency. If he elects to do it in his own office, he should realize the importance of the estimating department, pay it accordingly, and give it full authority to collect and co-ordinate cost data, to maintain constant cost checks on all jobs, and to let it act as liaison between his own forces and the client in all matters affecting costs, so that these won't go out of hand. If he hires an outside estimating agency, he should select a good one, and give it the same co-operation.

Being a quantity surveyor myself, engaged in the business of producing reliable estimates, I know the pitfalls of estimating. In our organization, all estimates are carefully checked; we keep in touch with price changes and labor productivity; and we have specialists for such trades as carpentry, structural steel, miscellaneous metals, plumbing, heating, and ventilating work, and electrical work. Nevertheless, we cannot *guarantee* that our estimates will be within 10 percent of the low bid, even though we strive to be closer. In this respect we are no different from all others engaged in estimating, whether they be contractors, subcontractors, or estimating firms, as a glance at any big tabulation will show.

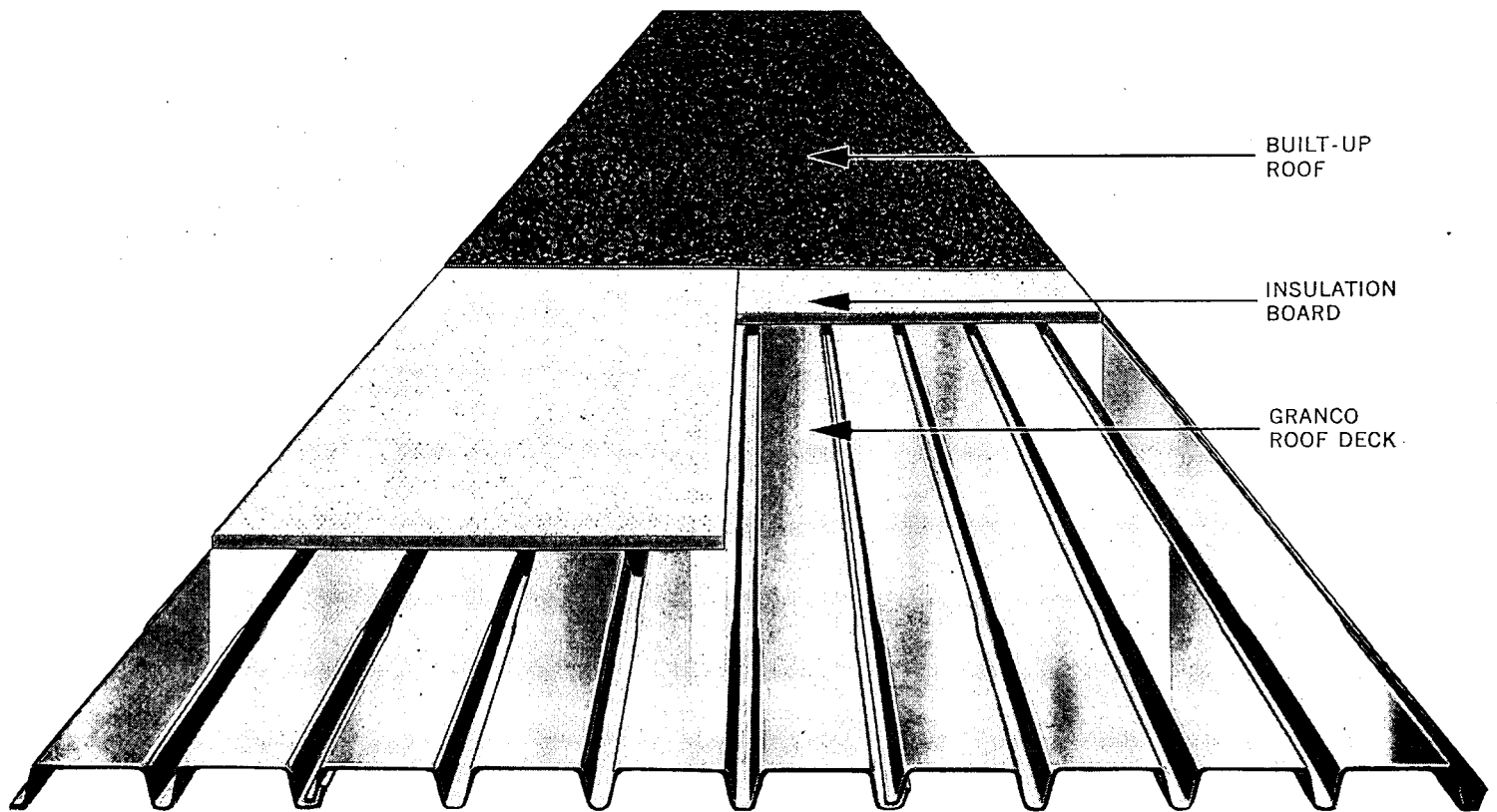
Architects may ask whether estimates prepared by skilled personnel by the detailed method, which cannot be guaranteed, and which are reliable only to within, say, ninety percent, are worth the high cost of producing them. The construction industry answers, yes; for no other method has yet been developed that will produce estimates that are even ninety percent accurate.

* Quantity Surveyor, Detroit, Mich. Kenny has been engaged by Chief of Engineers, U.S. Army, to prepare an estimating manual for standardization of Corps of Engineers estimating procedures.

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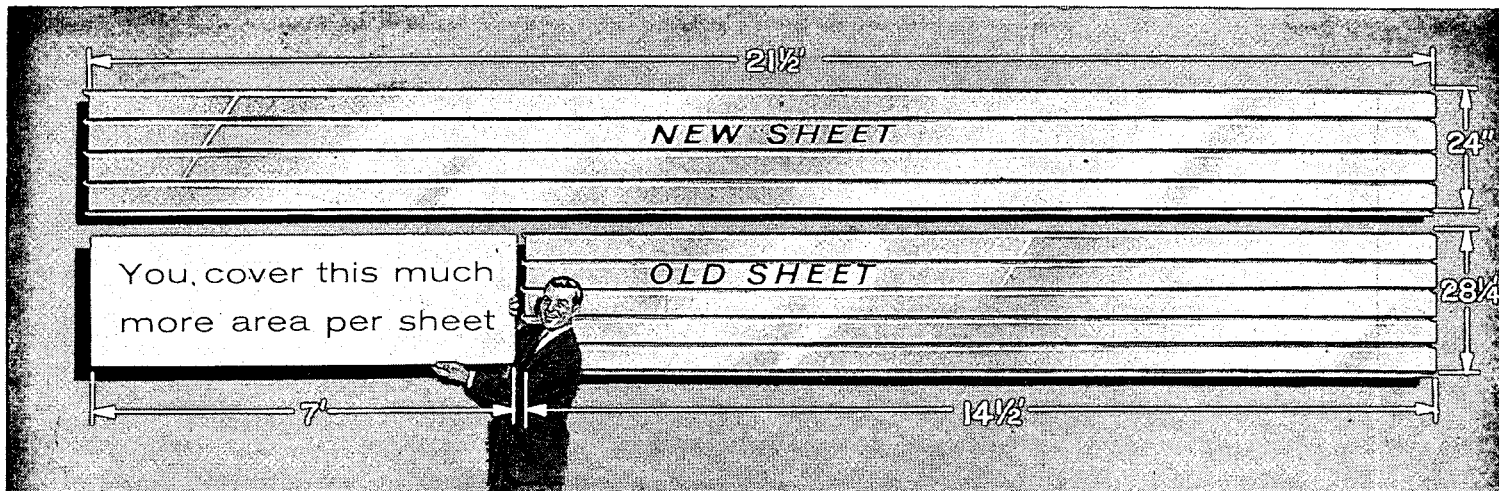
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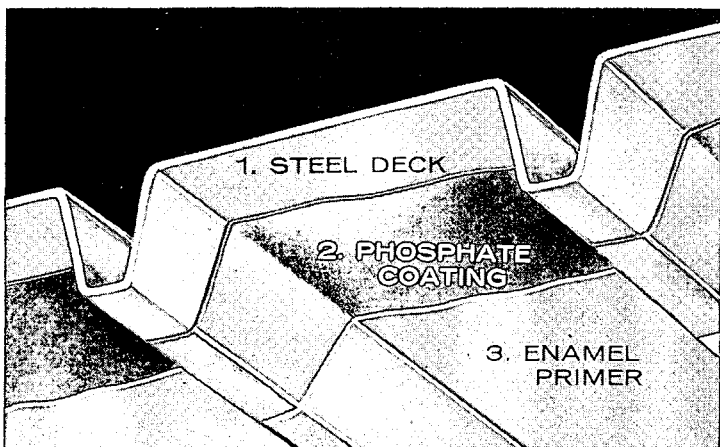
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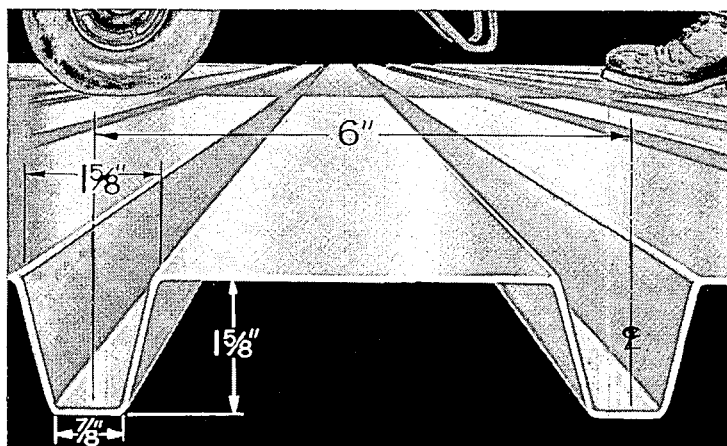
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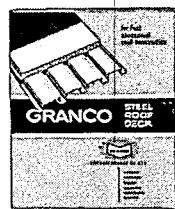
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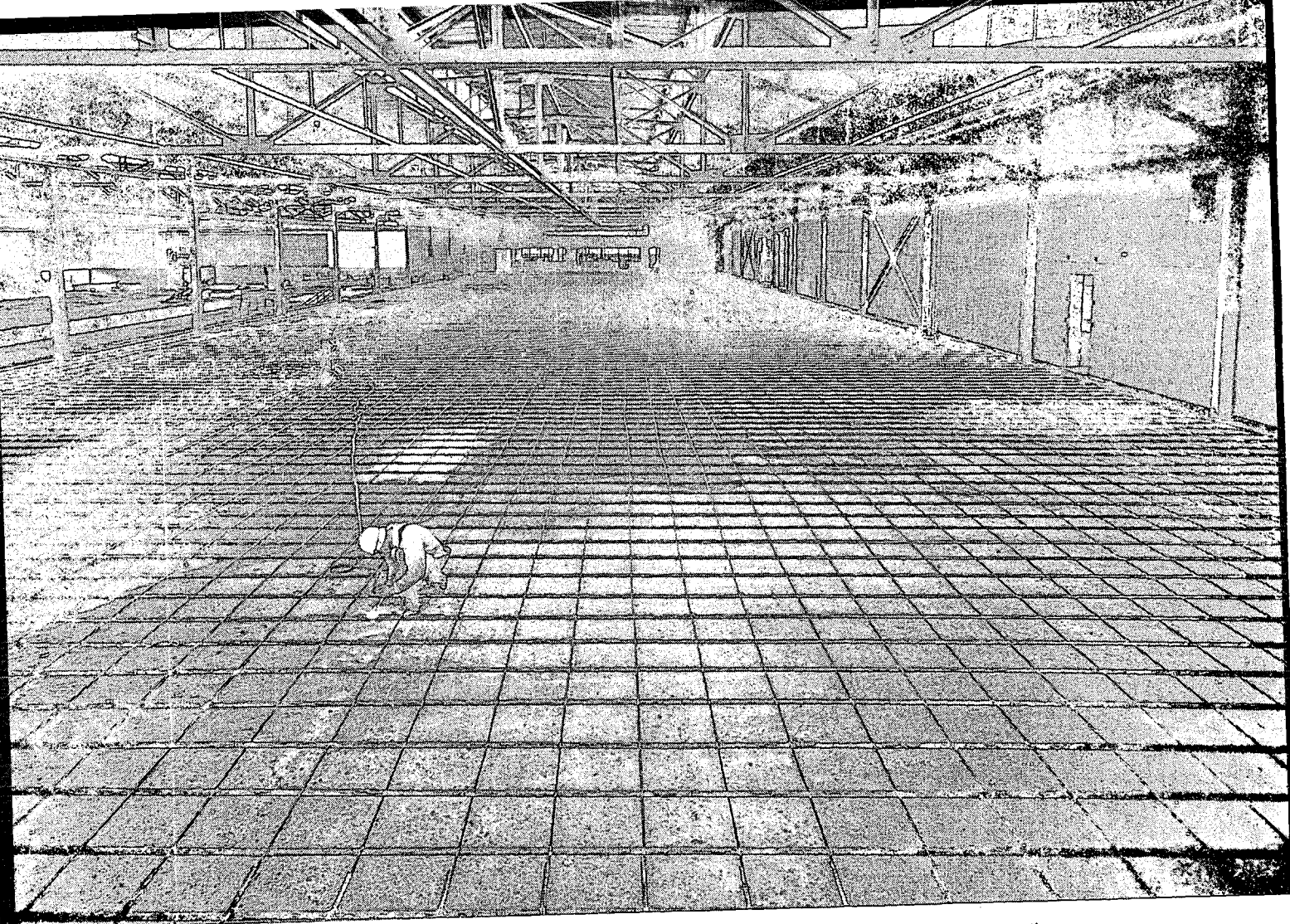
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To keep corrosion from "calling collect"— Pacific Telephone & Telegraph uses Wrought Iron Pipe

This radiant heating system serves 22,500 square feet of floor area in PT&T's warehouse at San Leandro, California. It's an excellent example of the company's insistence on durability. More than 16,300 feet of corrosion resistant wrought iron pipe safeguard the system against premature failure and costly repair.

The system, planned and designed by PT&T's Engineering Department, features some interesting construction details which protect the floor against damage from heavy fork-lift trucks and impact from bouncing reels of cable. After the 10-inch structural slab was poured, wrought iron pipe coils were laid in place. Over the pipe coils, a wire mesh was stretched to strengthen the concrete "topping" slab, and contribute to more even heat distribution. Then the pipe and mesh were covered with 3 inches of concrete. Finally, a metallic floor hardener was applied to the surface.

Briefly, here's why wrought iron pipe was so ideally suited for this application at Pacific Telephone & Telegraph Company. It's easy to install and dependable in service. It takes short radius bends without springback. It produces sound welds free from pinhole leaks. Its uniform structure assures sharp, full-depth threads. And because of its great mechanical strength, wrought iron pipe takes punishment well during installation. It all adds up to long service life, at low cost per year.

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REINHOLD

practical and lucid

Dear Editor: Your November 1957 issue, featuring MODULAR ASSEMBLY is the most practical and lucid presentation of the subject I have yet seen.

Most of us have been very receptive to the idea for years and do plan to put it into actual practice in the drafting room as soon as the current job is finished; after which we have usually been too busy looking for the next job.

Reviewing some of our work, we find that we have actually used the principle of modular measure to a very large degree, primarily to effect savings in construction cost. What savings, if any, can be effected in drafting costs, we have yet to experience.

MEYER KATZMAN
New York, N. Y.

fears design controls

Dear Editor: I have been concerned about the module for a long time and aware of its advantages in today's industrial society from a production point of view, as well as its new design possibility; but I do fear possible design controls.

Your presentation is fair, thoughtful, and presents all sides of the question; the possibilities and the dangers. I am glad to see it done in this manner because architects must be aware and thoughtful to assure that this type of standardization remains our servant and will not become our master. We must act as the creative conscience to avoid sterility because industry will not, nor is it fitted to do so, economically or psychologically.

There will always be the individual who will defy a module, and the general mass group which will usually welcome it to make work simpler. We need both—the architect looking for subtleties and refinement which today may be of the unusual, and the architect who accepts the industry's favors and does

the creditable work.

Let's not discourage either!

Too, there will always be the "new" Ronchamps, as personal as the most exotic individual—all are needed. Man's history is a history of breaking imposed barriers.

Let's not discourage anyone—the modular bound, and the free, free agent!

MAX ABRAMOVITZ
Harrison & Abramovitz
New York, N. Y.

rebirth or destruction

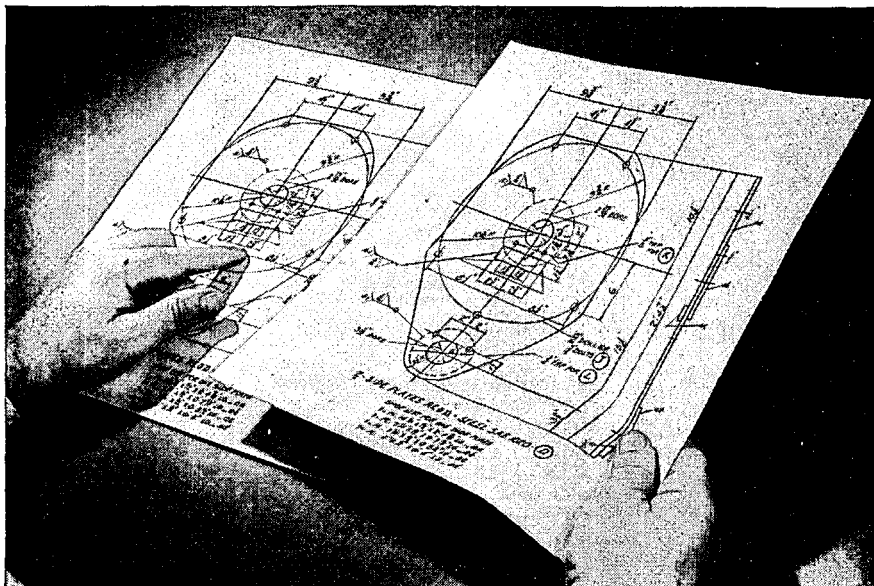
Dear Editor: I have been out of the office quite a bit in the last few weeks and hence, have not had a chance to give you my reaction to NOVEMBER 1957 P/A which covered, pretty thoroughly, the question of MODULAR ASSEMBLY.

My first reaction is that you have done a much needed job on a complicated subject and presented it as clearly as it has been done in a long time. Certainly, the careful analyses of the various approaches should clear up a lot of people's thinking on a much misunderstood problem. I cannot help but feel, as you do, that more and more of our building products must come to the site completely fabricated. The building industry cannot lag behind the rest of the world much longer.

The really soul-searching problem for the architects is whether we will be able to control this offspring, or wind up creating a Frankenstein's monster. In the hands of the people whose work you have illustrated, the results are superior; but I cannot think of anything worse than having others, particularly manufacturers, take what is basically a good idea and develop chaos where we should have order and discipline. In essence, the test might well mean either the total destruction of our profession, as we now know it, or the rebirth of the architect as the accepted leader in the field. It seems to me that the architectural profession

(Continued on page 18)

DRAFTING TRENDS



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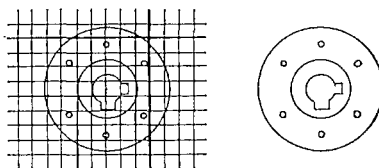
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p/a views

(Continued from page 17)

must provide both the inspiration and the restraint. I sincerely hope that your magazine will continue to serve as the profession's conscience in these respects.

JOHN W. MCLEOD
McLeod & Ferrara
Washington, D. C.

issues circulated

Dear Editor: I read NOVEMBER 1957 P/A "out of context": I studied it direct from mail to home, in contrast to two to three months behind from where I place them on the chest by my bed.

We were interested indeed and the issues have circulated in the drafting room.

RICHARD L. AECK
Aeck Associates
Atlanta, Ga.

grateful for "lift"

Dear Editor: Your November 1957 issue leaves me ecstatic with appreciation. It does a magnificent job for MODULAR ASSEMBLY in over-all as to philosophy, and in detail as to application.

MBSA is very much in your debt. Speaking for it, permit me to say we are grateful indeed for this great lift to our program.

C. E. SILLING
C. E. Silling & Associates
Charleston, West Va.

writing and drawings

Dear Editor: After reading the article on MODULAR ASSEMBLY, etc., in NOVEMBER 1957 P/A, we would like to compliment you on the fine, complete piece of writing and the drawings which were included.

JOHN P. BUSH
Industrial Designer, Product Development
Kaiser Aluminum & Chemical Sales, Inc.
Chicago, Ill.

favours 1" grid

Dear Editor: As a draftsman, I consider your article on Grid System detailing an insult to me if I can't lay out a job without following a "grid" pattern.

Detailing a job to imaginary grid

(Continued on page 20)

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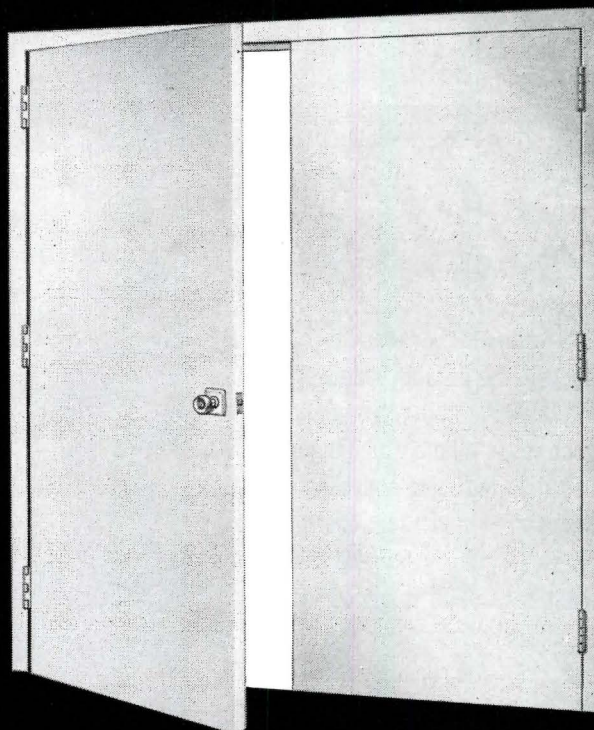
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(Continued from page 18)

lines as shown on page 175 of NOVEMBER 1957 P/A, where major dimensions are not even to a rough or finish dimension and then adding fractions to find a total or finish dimension, is bad detailing and would create many field problems.

A grid or module is reserved for

structural or panel sizes. If otherwise, I suggest a 1" grid which is the basic unit of the foot measure.

FRANK R. PERL
Monterey Park, Calif.

salutary effect

Dear Editor: It was only during Christmas recess that I had an opportunity to study carefully NOVEMBER 1957 P/A. I have now done so and take this opportunity to con-

gratulate you on the excellent presentation of the modular idea.

As I think you know, I have long beat the drum for Modular Measure and I can think of nothing that would have a more salutary effect on the growth and adoption of the idea than the presentation contained in your November magazine.

Dean HAROLD D. HAUF
School of Architecture
Rensselaer Polytechnic Institute
Troy, N. Y.

toward real beauty

Dear Editor: I think the MODULAR ASSEMBLY issue was outstanding. I personally am of the persuasion that the movement, if it could be called that, should lead toward real beauty, not sterility nor neutrality; but this, of course, depends upon the genius of the architects.

I found myself worrying that MODULAR ASSEMBLY may over-encourage rectilinear design, may too-glorify 90° angle. Many of our new materials offer wonderful opportunities in non-geometric, let alone non-rectangular shapes. Reinforced concrete is one. But MODULAR ASSEMBLY need not impede the use of freer shapes in these materials. Perhaps the obvious possibility of great contrasts between the extremes of shape character is the answer—rigid versus free, all under control of the architect, whose task is the more challenging.

Let us hope P/A can keep up more on the subject. Certainly this is the healthiest kind of didactic journalism for a profession which needs it, and badly.

ALEXANDER S. COCHRAN
Cochran, Stephenson & Wing
Baltimore, Md.

the beginning of the end

Dear Editor: Your November 1957 issue on MODULAR ASSEMBLY is an important step toward focussing attention on a key problem of contemporary architecture. The whole future, not only of the architect's profession but of Man-made Environment, depends on the extent to which architecture adopts or rejects industrial materials and production methods. This future seems indicated by a quotation from Robin Boyd,

(Continued on page 24)

FOUR DISTINCTIVE HAWS FOUNTAINS SMARTLY STYLED IN VITREOUS CHINA

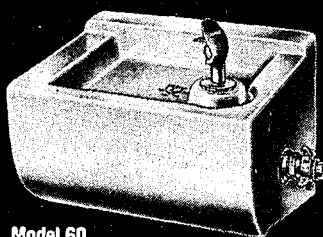
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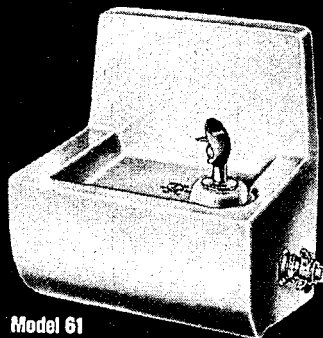


Model 62-GF: HAWS glass filler faucet installed on back of Model 62, for double-duty convenience.

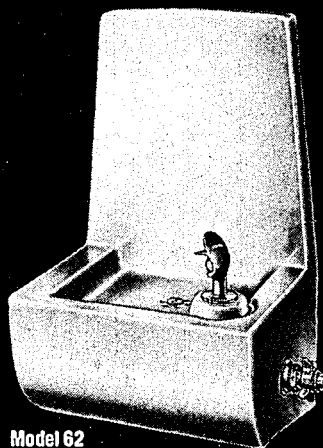
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Model 60



Model 61



Model 62

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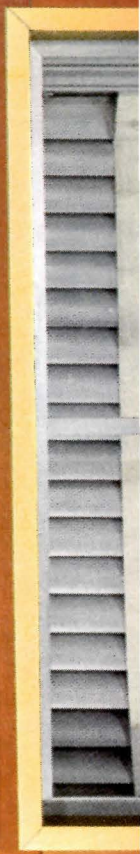
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Your Guide to the Best
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"ALCOA THEATRE"
Exciting Adventure, Alternate Monday Evenings

(Continued from page 20)

who writes: "The significance of this boom in curtain walls . . . marked the beginning of the end of the gentleman's profession of architecture which has served the world."

His forecast is documented by every line and every illustration in your issue. A composite photograph of some of the modular structures, presumably chosen by you for their quality, demonstrates appalling results. They prove the key theme of modular assembly, which is *speed and economy of construction*.

If we are to align architecture with the manufacture of commodities, we should drop the designation and the false pretense of being a profession. Exclusive motivations of cost and speed finally make building part of the Industrial Revolution in which—to the despair of the Bauhaus—it had never fully partaken. But why, then, the hypocrisy, the doubletalk of art and design in the comments that frame your articles on theory, practice, and calculation of modular structures?

Like incantations of frantic minds haunted by bad conscience, "infinite variety," "widest variety," "imagination and taste," "individual application" are bandied around in your issue as if every single building you show did not bear out the naked fact that these are design clichés, incompatible with industrially produced buildings. You either have standardization or you have "infinite variety": you cannot have both.

Dr. Gropius spotlights the most catastrophic consequences of this foggy thinking by our leaders, when he writes: "The coming generation will certainly blame us if we should fail to overcome those understandable though sentimental reactions against prefabrication."

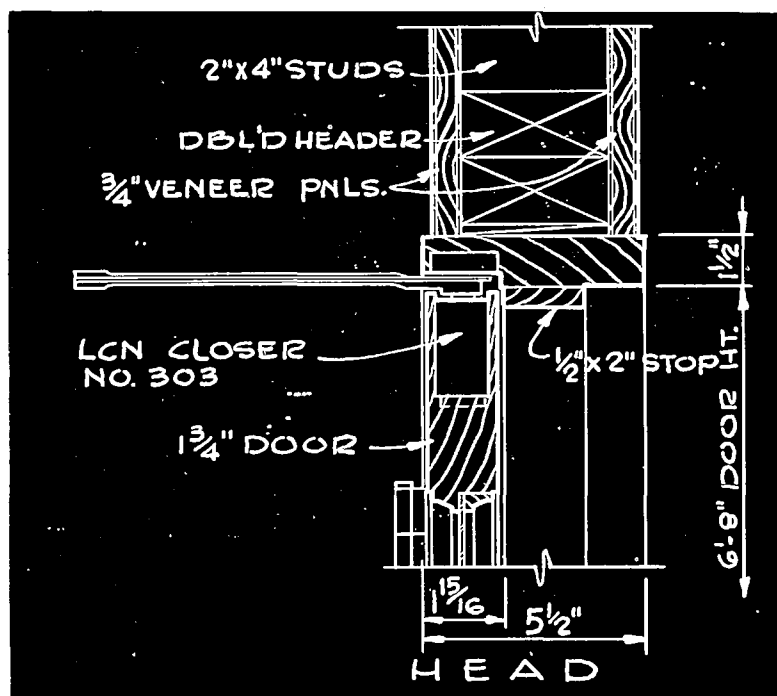
The coming generation—which is always invoked when a doctrine is of doubtful validity for the contemporaries—will, according to my experience, do just the opposite. There is a desperate bewilderment among architectural students, who

are acutely aware of the schism between their professional education and the promotion of building mass-production. They are fully conscious of the evident fact that the U.S.A. is losing out to the architecture of Italy, Scandinavia, and South America, not because these countries build cheaper, faster, and more uniformly than we—but precisely because they do not. Unless we drop

the old-fashioned romanticism of the 20's, which saw in the machine "a liberator from human toil," and confine its contribution where it belongs, which is the building of commercial structures, the noblest, oldest, most influential profession of humanity will die a cheap, fast, and totally uniform death.

SIBYL MOHOLY-NAGY
Pratt Institute
Brooklyn, N. Y.

(Continued on page 27)



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door Shown on Opposite Page

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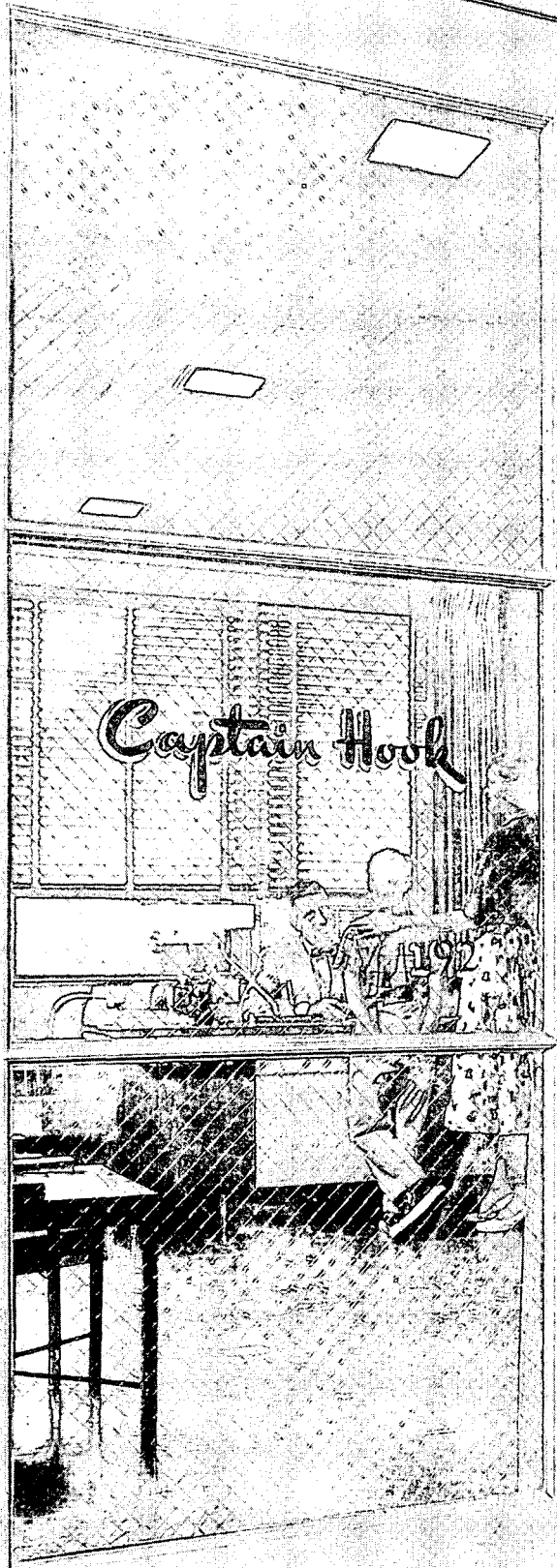
CLOSER CONCEALED IN DOOR

WALT DISNEY ELEMENTARY SCHOOL
TULLYTOWN, PENNSYLVANIA

John S. Carver, Architect

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Construction Details on Opposite Page





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HELLMUTH, OBATA & KASSABAUM

Eyo Obata

This shopping center captures the flavor of an Old World bazaar with the attendant gaiety which heightens the buying instinct . . . yet the functional, two-story design fits the modern shopping center concept perfectly.

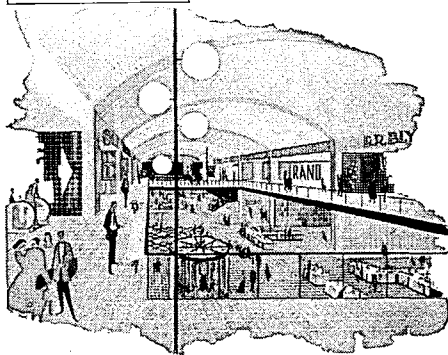
The architects helped themselves liberally from ceramic tile's riotous palette . . . created with tile color and texture the "visual excitement" so necessary for a consumer buying climate. Function, too, is served by the device of having different tile colors serve as a visual separation of store units.

Add to this other ceramic tile benefits: unmatched dura-

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CERAMIC TILE



*Design for a Shopping Bazaar
by Hellmuth, Obata & Kassabaum*

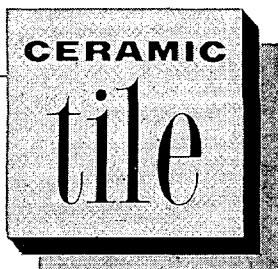
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p/a views

(Continued from page 24)

visual criteria

Dear Editor: It is a good sign for the future that the Grand Design, i.e., the new classical, was the subject of the P.S. in your distinguished magazine (JUNE 1957 P/A). Discussion in matters of taste in the arts is not without its virtues. Few are the great buildings, pictures, and statues which have not aroused or followed on eager, if not bitter debate.

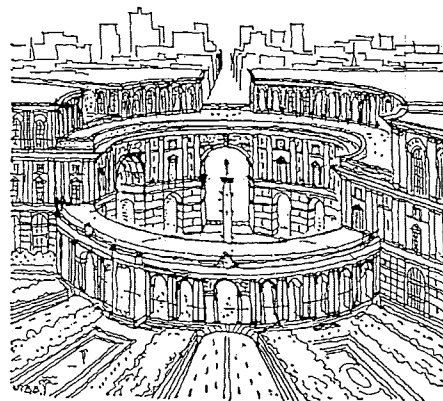
May I offer one or two suggestions and amplifications? The drawing, entitled "Monumental Entrance for Brooklyn Navy Yard" by John Barrington Bayley — it illustrated your editorial — is to be found in "The Modern Is Dead — Long Live the Modern," which appeared in the *Mentor New World Writing* #11.

To apply political phrases such as "Far Left" and "Extreme Right" to the current debate of the Grand Design is meaningless. As for "Brutalism" it was, I believe, first adopted as a term of praise in the idiom of the Modernist.

It should be clear by now that the springboard of the Grand Design is the visual, whereas that of the Modern is the structural or non-visual. It is a matter of indifference to those of us of the Grand Design, if a fig bar is substituted for a steel bar in construction so long as the fig has the useful qualities of steel. But when making use of the fig bar we would not have the design "express" the fig nor convey the "clean," "pure," "organic," "functional" nature of the fig.

All architects whose approach is primarily structural (or rational or functional) are Modernists no matter the product. The glass-and-steel examples offered in the *Harper's* article were mentioned because they are more with us than the other varieties. With few exceptions the basis for all of them lies in the theories of Viollet-le-Duc.

Your editorial derides the statement that "few architects are aware

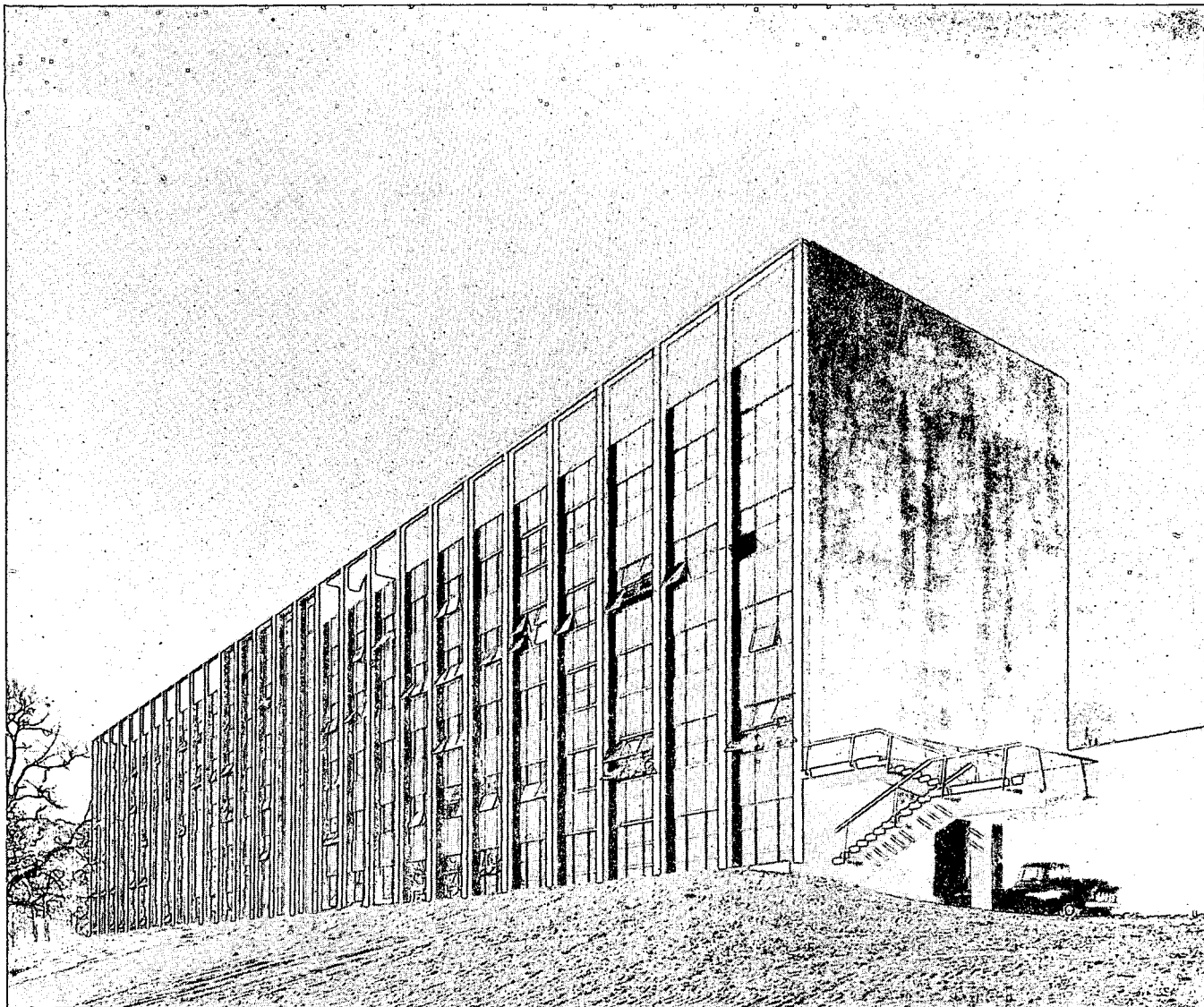


A proposal for Columbus Circle, New York. Drawing by John Barrington Bayley, from New World Writing (11).

of who in the past most influenced their work," in the description of the great Frenchman's role. His name is mentioned only casually in the standard books of the Modernists, by such authorities as J. M. Richards, Nikolaus Pevsner, Henry-Russell Hitchcock, and Sigfried Giedion. It would be interesting to know how many times he has been mentioned in the pages of *PROGRESSIVE ARCHITECTURE* in the past 20 years. Only John Summerson in his *Heavenly Mansions* can claim to have presented Viollet-le-Duc in his true stature.

Toward the end of the editorial, such terms as "reactionary," "retrogressives," and "progressives" are found. While perhaps satisfactory in a discussion of politics, these somewhat dated terms, like the others mentioned above, do not belong in a discussion of art. In the Grand Design the criteria are visual. For example, one of the first in judging a building is: What welcome does it offer the sister arts? Is there place for painting and sculpture, bronze work, and tapestry? What is the role of ornament? By such standards, the work of Frank Lloyd Wright slips easily to the bottom of the list. Our latter-day hamadryad covers his buildings with the creeping vine and the spreading bush but he leaves no place for a picture or a statue, nor does he admit wrought iron or bronze work. Like all Modernists he is terrified of incorporat-

(Continued on page 32)



JOSIAH WILLARD GIBBS LABORATORY, YALE UNIVERSITY

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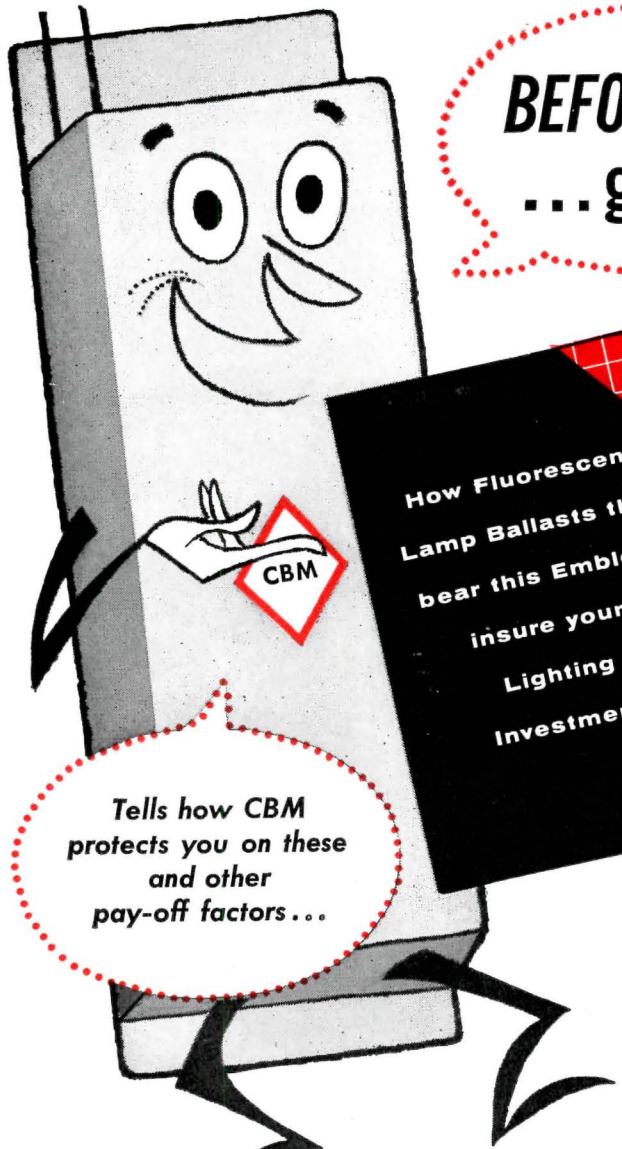
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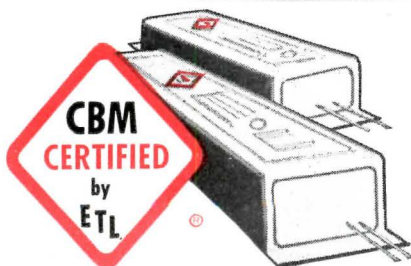
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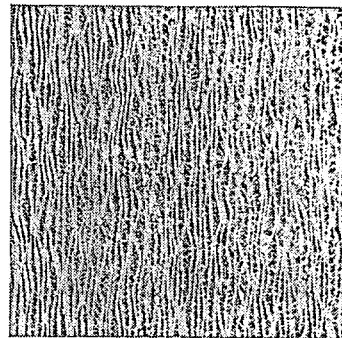
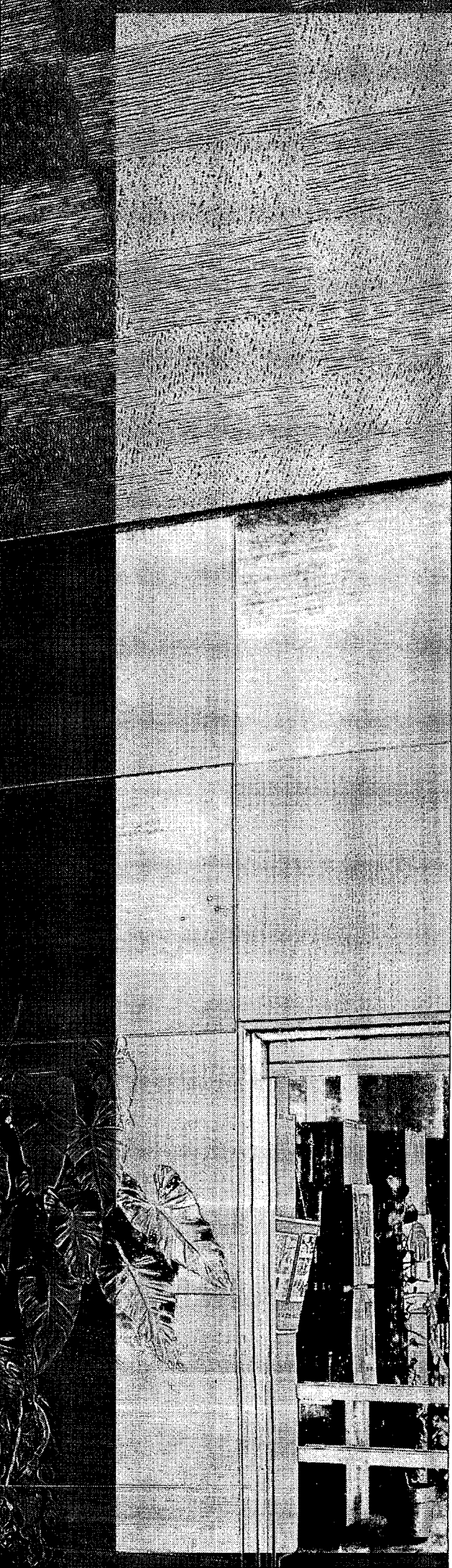
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(Continued from page 27)

ing the human form, clothed or nude, into a building. His contribution to the New York scene is to be covered with shrubbery and although it is a museum, presumably to house painting and sculpture, neither art has a place as part of the building.

On second thought, perhaps we

of the Grand Design can give new life to the dated terms. A building is reactionary because it leaves no place for the sister arts. An architecture which offers nothing but bare surfaces is retrogressive. A building may be considered progressive where there is ample room for painting and sculpture, where there are lunettes, cove ceilings, moldings to serve as frames, niches for sculpture, where there are high ceilings

for tapestries, etc., etc.

Your editorial observes at the opening that "... a large part of the practicing profession has little time to read literature which might relate to the work-in-hand to current discussion of, let's say, the philosophy of esthetics." The professionals may not have time but, happily for those of us who write, their clients do.

HENRY HOPE REED, JR.
New York, N. Y.

another winner

Dear Editor: The Association for Applied Solar Energy regrets that an error was made in announcing the fifth prize winner in the 1957 International Architectural Competition to Design a Solar-Heated House (page 62, NOVEMBER 1957 P/A). The credit for this entry should have gone to Marvin Goody, of Hamilton & Goody, and Robert Pelletier.

MRS. R. E. JENSEN
Editor, A.A.S.E.

notices

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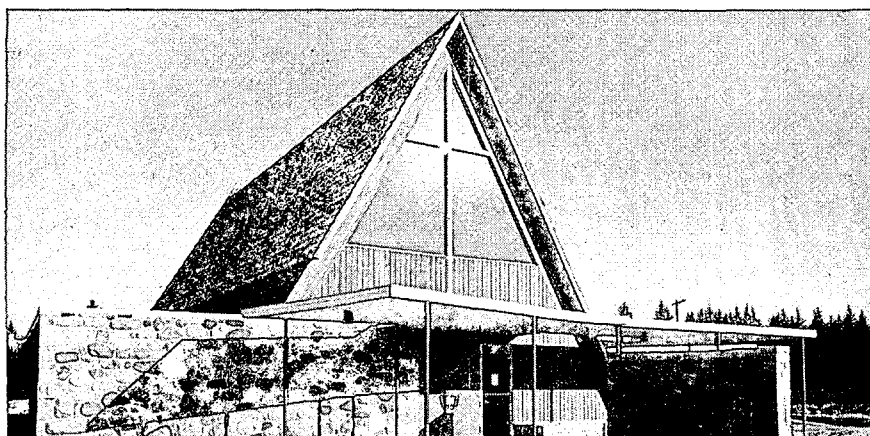
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Another fine example of the Spirit of "The Canadian Northwest"



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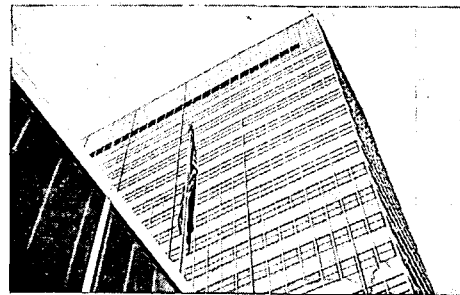
GROSVENOR ESTATES, ANACIS ISLAND
D. A. Chadwick, Architect

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Armco Stainless Steel—Combines rich lustrous beauty that defies time with high strength and hardness, and excellent corrosion resistance. Preserves the original beauty of your designs with little or no maintenance even in severe outdoor exposures. Assures client-pleasing durability and economy for facades, mullions, curtain walls, entrances, interior applications and building products.

Armco Enameling Iron—The world's standard base metal for porcelain enamel. Proved by more than a quarter-century of use in architecture, porcelain enamel on Armco Enameling Iron assures durable colorful beauty and low maintenance for curtain walls and interiors.

Armco ZINCGRIP® PAINTGRIP® Steel—This special hot-dip zinc-coated steel combines economical rust protection with a Bonderized surface that takes paint without pretreatment and holds it longer. Ideal for roof drainage, partitions, doors, building panels or curtain walls.

Armco ALUMINIZED STEEL Type 2—A hot-dip aluminum-coated sheet steel with the surface properties of aluminum and the strength of steel. Gives economical, long-time resistance to atmospheric corrosion without paint. Provides strength and durability for roof decking, building panels, rolling doors, curtain walls.

For full information on Armco's Special Steels, where they can be effectively used and how to specify, just fill out and mail the coupon. Armco Steel Corporation, 1288 Curtis Street, Middletown, Ohio.



Stainless steel entrances

ARMCO STEEL CORPORATION
1288 Curtis Street, Middletown, Ohio

Send me information on

- ☐ Armco Stainless Steel
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ARMCO STEELS FOR ARCHITECTURE

STAINLESS • ENAMELING IRON • ZINCGRIP PAINTGRIP • ALUMINIZED STEEL





Alonzo J. Harriman, Inc., Architects

Certified Kiln Dried redwood, with a k factor of 0.76, helps lower maintenance costs for this Lincoln, Maine, school.

Photo: Joseph Molitor

Cold facts on redwood

The high insulation value of California redwood means schools, homes and commercial buildings that are warmer in winter, cooler in summer, more pleasant the year around.

Specify grade-marked, trade-marked "Certified Kiln Dried"

CRA redwood for uniform quality on every job.



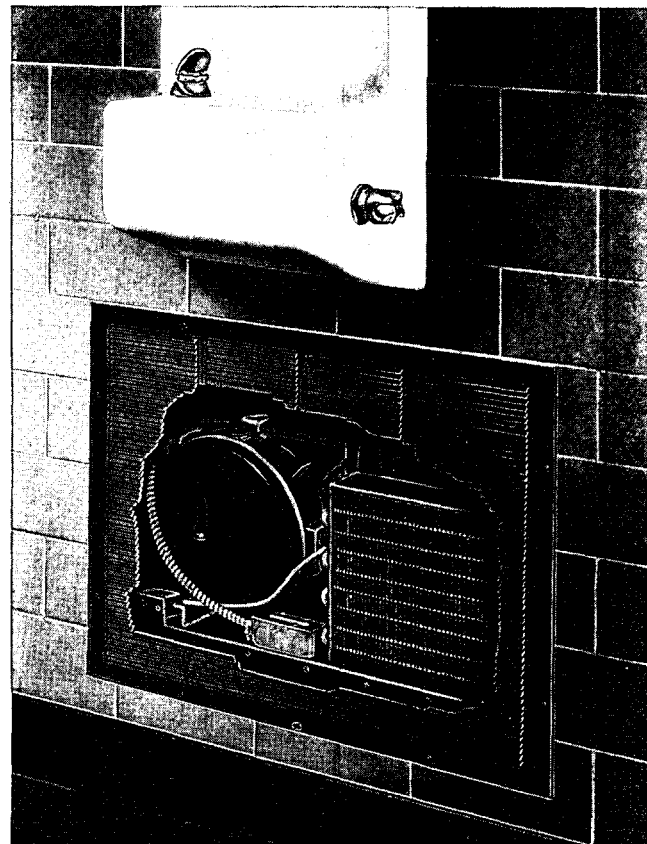
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IN-A-WALL
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So thin, an 8" wall can hide it!



The Oasis In-A-Wall Water Cooler is new, slender, inconspicuous . . . so thin it can be specified for mounting in an 8" wall. It supplies refreshingly cold water—'round-the-clock—to as many as four new or already installed remote drinking fountains, in restaurants, office buildings, factories, institutions, *even homes*.

The In-A-Wall Water Cooler is super-compact, extremely versatile. It mounts and performs equally well on joists, in closets, or on-a-wall.

Oasis engineers endowed the In-A-Wall with the capacity and endurance of a giant, the slenderness of a nymph, the versatility of an acrobat, and enough design potential to kindle a gleam in an architect's eye.

Comes in two models—IW-5 supplies 5 GPH, sufficient for 60 persons in offices or schools, 35 in light industry. IW-10 supplies 10 GPH, enough for 120 people in offices and schools, 70 in light industry.

OASIS Water Coolers for Every Requirement

The complete Oasis Water Cooler line includes models with capacities from 2 to 35 GPH, hand or foot operated, pressure or bottle, stainless steel, heavy duty, explosion proof, air-sealed industrial, juvenile, refrigerated compartments, and the famous Oasis Hot 'n Cold which makes piping hot water as well as cold.

For complete specifications and roughing-in details, mail coupon below



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The Ebco Manufacturing Company, Columbus 13, Ohio
 Manufacturers of the most complete line of water coolers
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Send Oasis In-A-Wall specifications and roughing-in details.

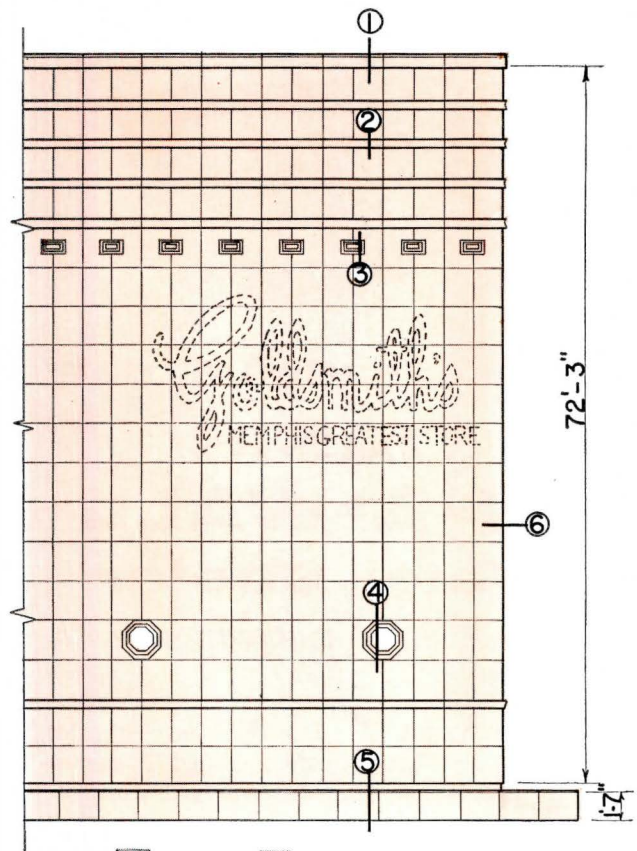
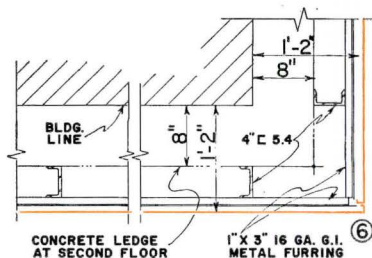
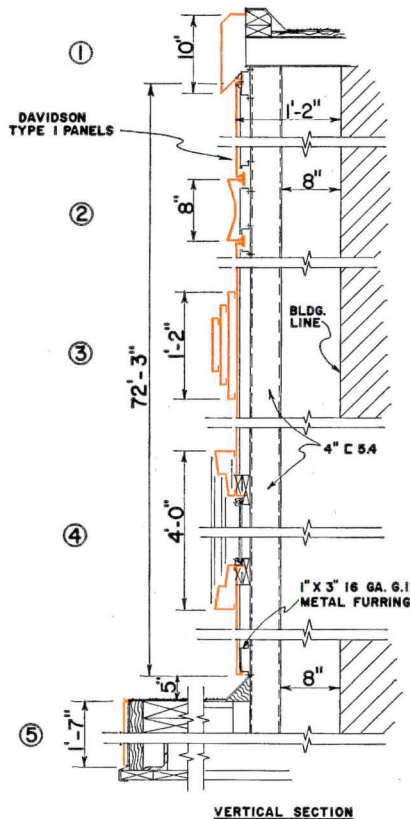
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ARCHITECTURAL INFORMATION

for those who design, build, or buy buildings

A.I.A. FILE NO. 15-M-1

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Architect:
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Contractor:
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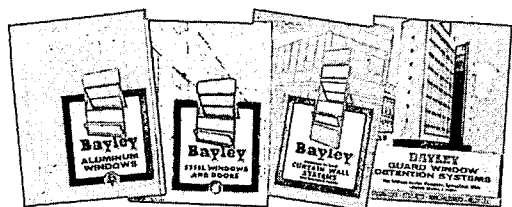
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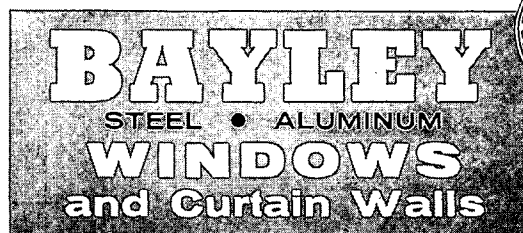
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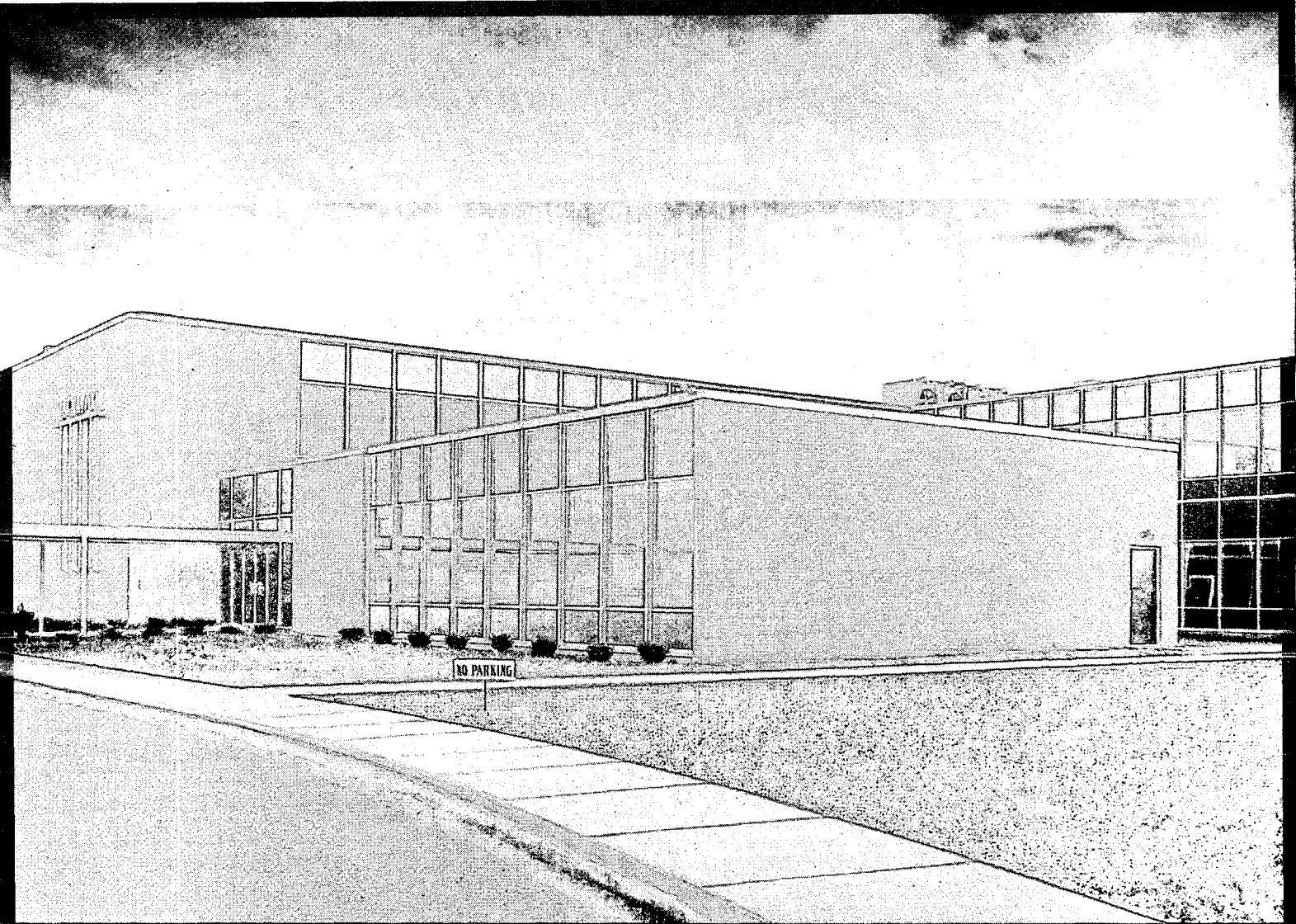
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It's WATER-TIGHT when it's Kawneer

**Water can't get through the panels
or between the panels — can't get in at all!**

can't get through . . .

Kawneer Unit Wall offers positive moisture control—provided within the wall are vinyl weatherseals and a complete baffle and drainage system to catch any moisture from condensation that might escape the Vinyl weatherseals.

can't get between . . .

The Kawneer Unit Wall expands and contracts on a controlled basis—special split mullion design distributes all wall movement from temperature changes.

Simple construction and trouble-free maintenance are insured by these other Kawneer features:

Modular Units—in either standard or optional types,

sizes and arrangement.

Flush Interior Design—frame surfaces are flush, facilitating mechanical work and installation of furnishings.

Clean Sight Lines—vinyl glazing in fixed or operating sash add to appearance and improve weathering.

No Exposed Fasteners—fasteners are concealed within the units themselves.

Standard Door Units—factory assembled, and designed to fit with wall units.

Special Sash—Operable, has double Vinyl weatherseal and lifetime hardware.

Highest quality materials and workmanship.

From store fronts to skyscrapers... the "Kawneer Touch" means

How the "Kawneer Touch" on unit wall offers greater design freedom, smooth scheduling, fast erection

Great Design Flexibility:

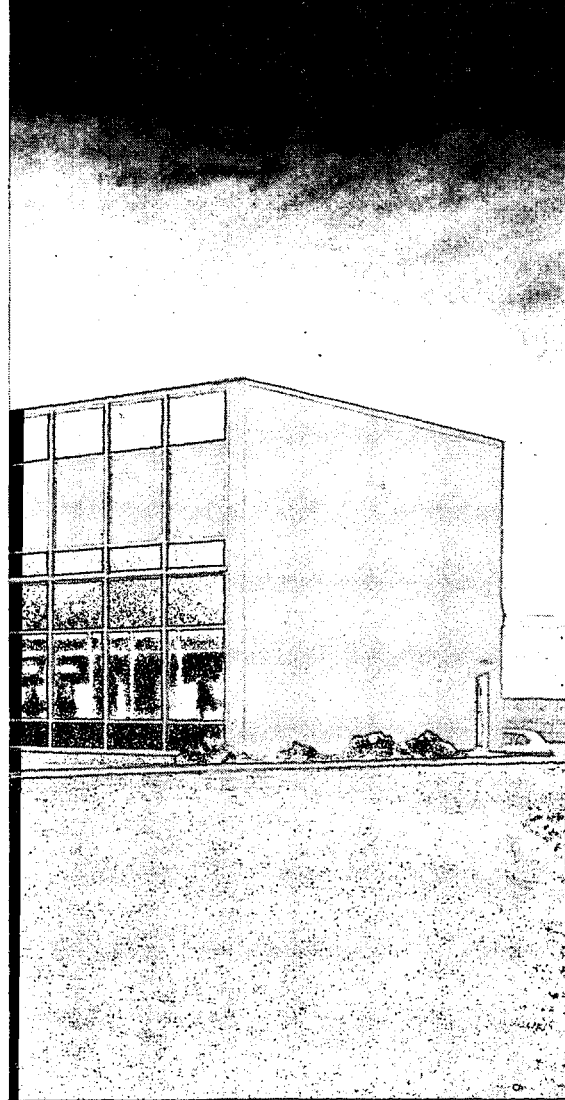
Kawneer Unit Wall is pre-engineered and pre-assembled with a wide range of unit types, sizes and color panels. Optional widths, heights and multi-story applications are also available in dimensions of the architect's choice.

Single Responsibility for All Materials:

Framing members, wall units, door units, insulated panels and sash are all job-planned at the factory, all arrive at once, so there are no complex schedules, no worry, no cutting to fit in the field.

Pre-Assembled, Ready for Installation:

All units arrive complete with panels ready for glazing, or with operable sash in place, and with pre-hung doors. Only field work required is installation of units and glazing.

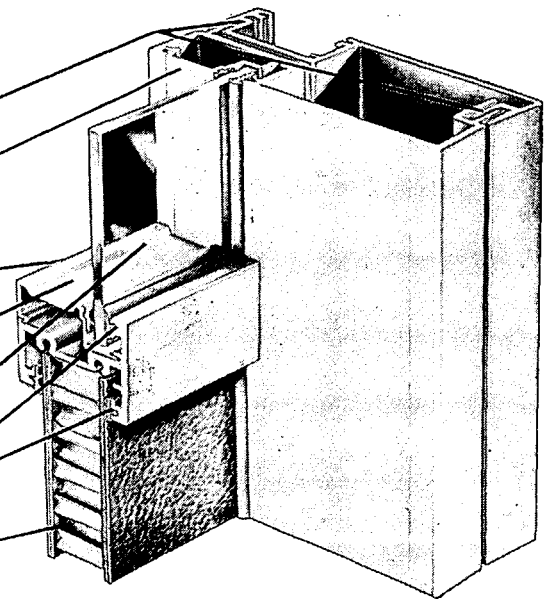


*Building: Magnavox Offices, Urbana, Ill.
Architect and Engineers: Clark Daily & Dietz
Contractor: Chism & Miller
Wall Erectors: Bacon & Van Buskirk*

Unit Wall

Cut-away view of the "Kawneer Touch" in unit wall

Double Vinyl Weatherseal
Concealed Flush Glass Stops require no fasteners
Interior face of stool rail flush with mullion face
Condensation gutter below fixed light
Fixed glass from $\frac{1}{8}$ " to $\frac{1}{4}$ " as required (1" insulating glass optional)
Vinyl gaskets eliminate mastic glazing compounds
Insulated panel (other types optional)



practical beauty, proper installation, exceptional durability

SNACK BAR



Mobile, Ala.—Photo from interior of Old Spanish Fort Motel restaurant shows that LUSTRAGRAY reduces sun glare, yet provides "clear glass" vision.



Photo from exterior. This main building of Old Spanish Fort Motel has nine full-length picture windows glazed with LUSTRAGRAY by The Prichard Glass Co., Mobile, Ala. Architects: Hammond & Woods, Mobile, Ala.

GLARE REDUCING SHEET GLASS

Picture windows of **American LUSTRAGRAY**
draw tourist trade

Specify AMERICAN LUSTRAGRAY for your new commercial buildings—and your clients will tell you that the attractive gray windows act as "beacons of welcome."

Here's a case in point. According to the owner of the motel, George Fuller Sr., the LUSTRAGRAY glazing "invites more casual tourist business than any other form of outdoor advertising tried by the Company."

And—from the inside looking out—sun glare is softened by this neutral gray glass. Through giant picture windows, diners enjoy the view of Mobile Bay in bright sunlight without squinting.

AMERICAN LUSTRAGRAY also reduces a significant amount of solar heat, adding considerably to

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CLEAR GLASS for
Maximum Daylighting
GRAY GLASS for
Controlled Daylighting

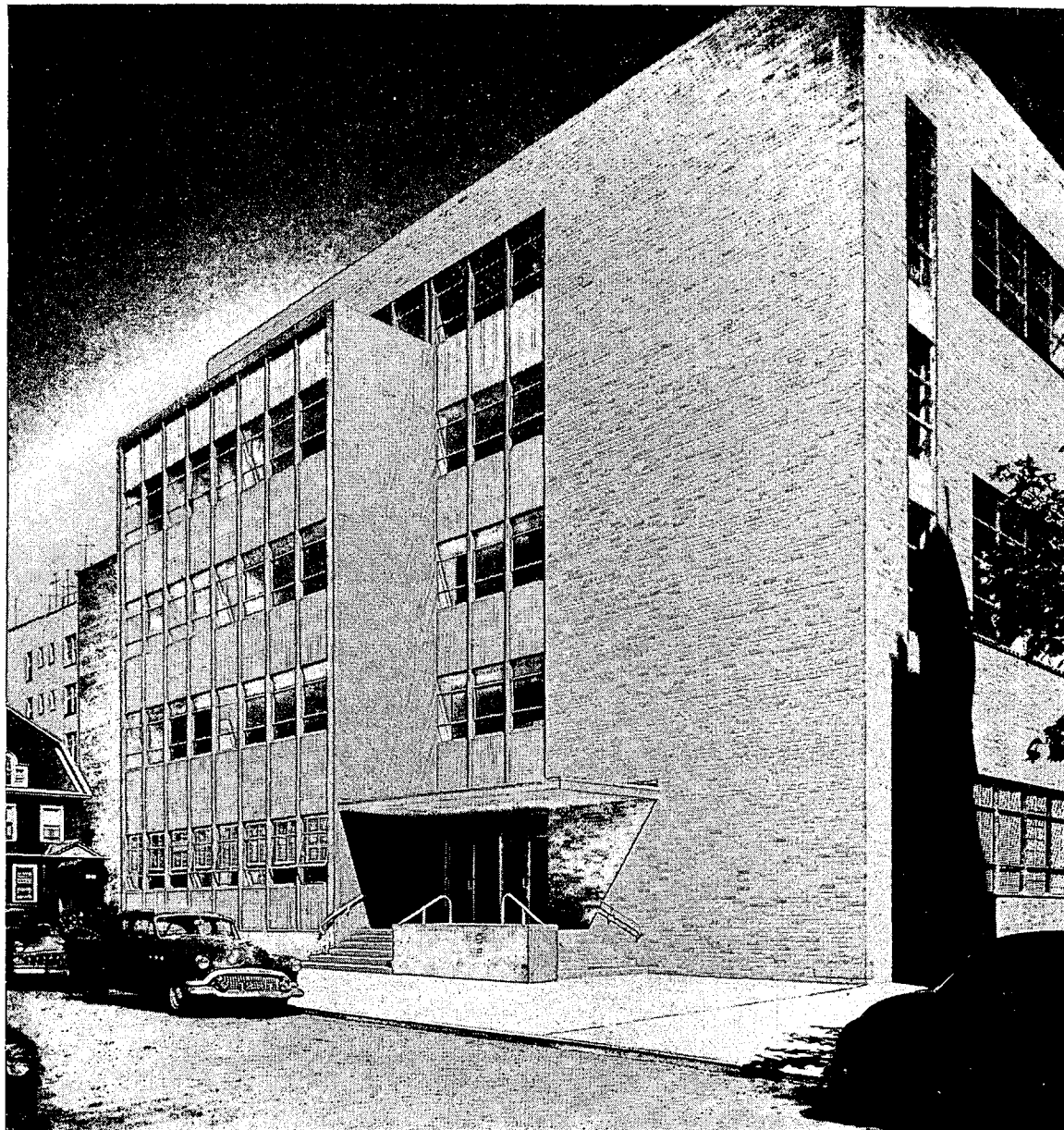


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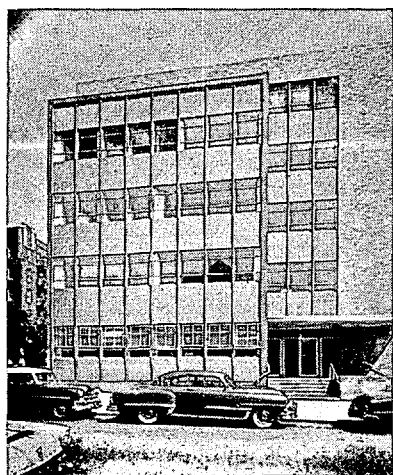
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ASTORIA "ST. DEMETRIOS"**

LONG ISLAND CITY, N. Y.

Gustave Iser — *Architect*

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Ceramic Veneer in Sea Mist Green units
20" x 24" x 1 1/4" was specified for span-
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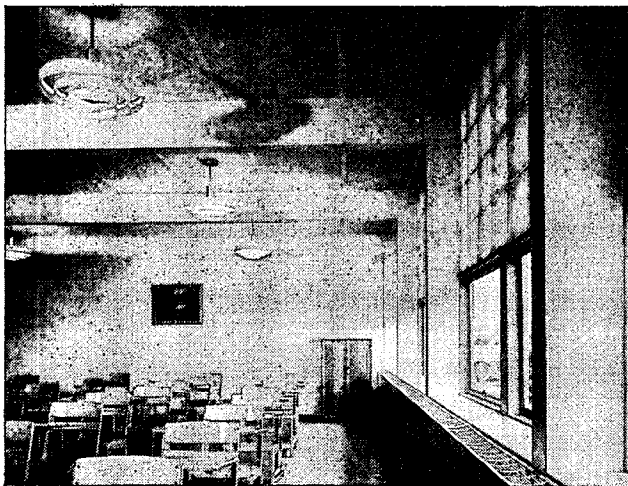
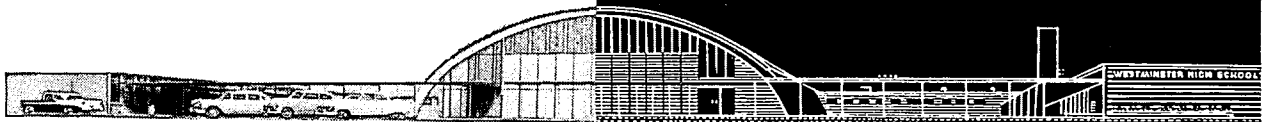
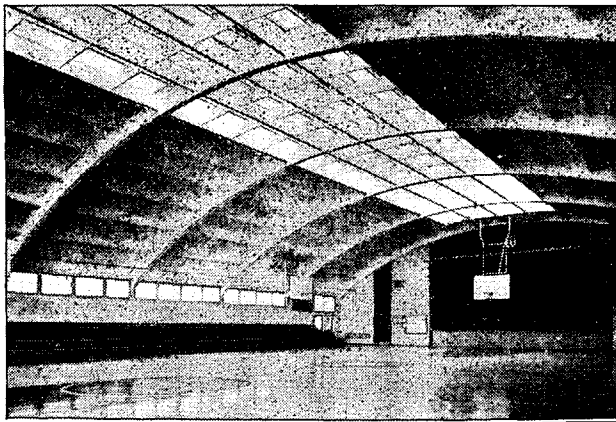
When you design with color in mind specify Ceramic Veneer

Visualize any color or texture, polychrome panel or eye-arresting sculpture, whichever fits perfectly into your plans can be reproduced faithfully in Ceramic Veneer. So versatile is this modern architectural terra cotta, so economical when you consider its lasting beauty and simplicity of maintenance, that it's easy to understand why Ceramic Veneer is specified so often for so many different types of buildings. In units large or small, for interiors or exteriors, it combines impressively with all other building materials. Custom-made by Federal Seaboard craftsmen, Ceramic Veneer extends the architectonic horizon... provides complete freedom of expression to match function. Without charge we will gladly furnish construction detail, data, color samples, and advice on preliminary sketches involving use of Ceramic Veneer.

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High School, Westminster, S. C.
Architect: Harold Woodward

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Aluminum WINDOWS and CURTAIN WALL

by **GENERAL BRONZE CORPORATION**

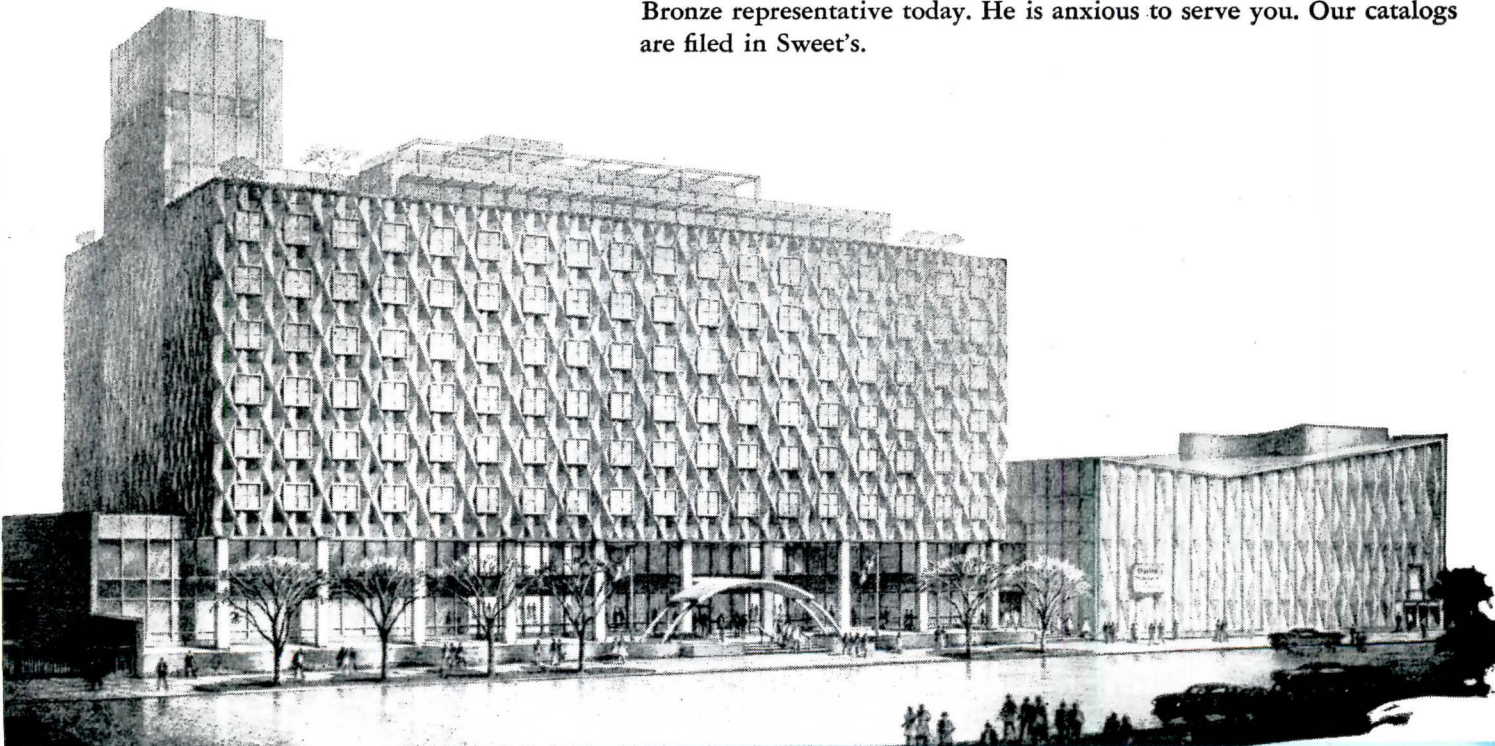
The colored aluminum curtain wall design of the new Fashion Institute of Technology will make it one of the outstanding school buildings of our times.

Not only does the modern curtain wall offer many economic advantages to the owner — such as faster construction, more rentable floor area, earlier tenancy, etc. — but it also enables the architect to give his buildings a truly modern appearance.

As a result of our pioneering efforts in the field of curtain walls and our 11 years of practical experience on more than 40 individual jobs, both large and small, we at General Bronze have learned the answers to many of the intricate and detailed problems that are a part of this highly specialized business.

If you are thinking of curtain walls, in terms of aluminum, bronze or stainless steel, either complete skin or grid system, we offer you the benefit of our experience working with all types of buildings, all types of materials — experience that can help eliminate many headaches for you and save time and money for your clients. Call in the General Bronze representative today. He is anxious to serve you. Our catalogs are filed in Sweet's.

Fashion Institute of Technology
New York, N. Y.
Architects: de Young, Moscovitz and Rosenberg
Contractor: Depot Construction Co.



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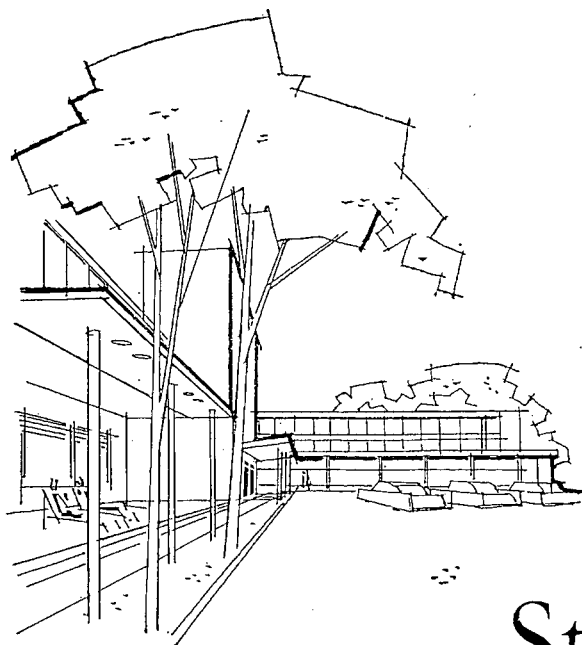
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modern building
that stays modern, returns
more on its investment.

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For hotels, motels, or any building's entire operational equipment—Temperature · Air Handling · Detection, Signalling and Command.

Through years of working with leading architects and consulting engineers, Honeywell has developed a new concept for commercial buildings—systems control centers. It helps you design buildings that:

Reduce client's operating costs because of the increased efficiency and economy of centralized controls for your automatic equipment;

Lengthen the building's life because this completely flexible system provides for future needs and Honeywell experience can help you predict them;

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allow you to be more creative in designing for the particular needs of each client.

Honeywell is the only company which has designed systems control centers for commercial buildings. And such Honeywell systems are working now in hospitals, schools, hotels, office buildings and banks.

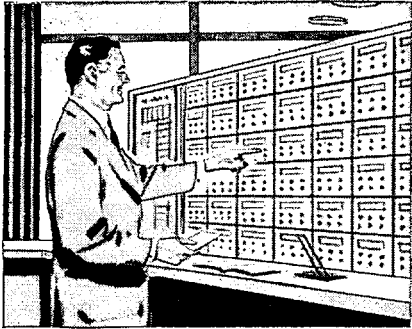
You can draw on this Honeywell experience even before the blueprints are started—can choose from the great variety of Honeywell products to design a system that will fit your plans best.

A Honeywell systems specialist will be glad to submit proposals for your evaluation at no obligation for any building you're planning. You can reach him at the nearest Honeywell office or by writing Honeywell, Dept. PA-2-30, Minneapolis 8, Minnesota.

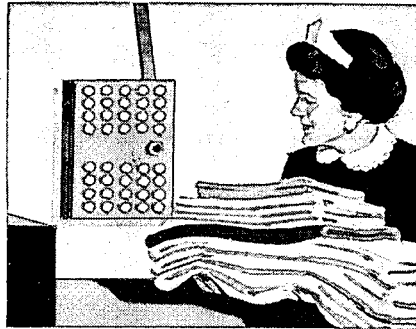
Honeywell



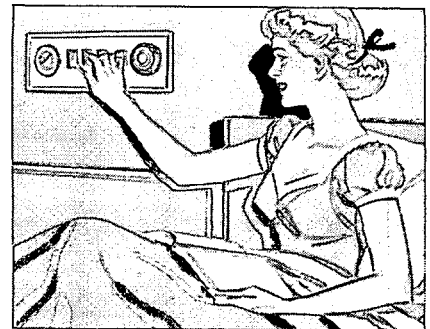
First in Controls



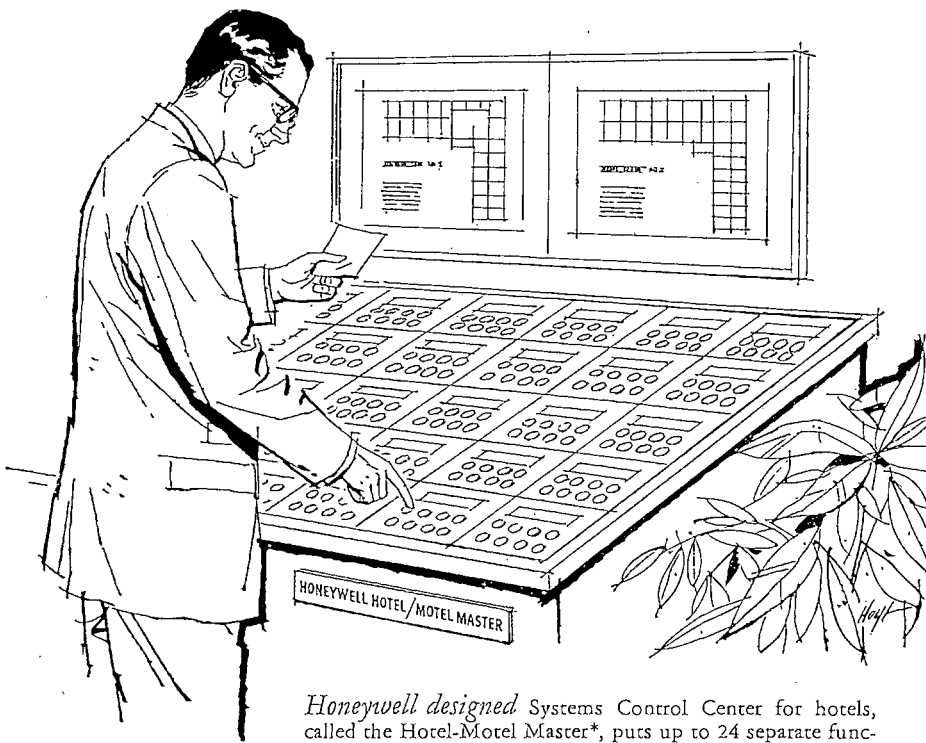
The status of each room; occupied, reserved or vacant is indicated on the front desk console. It can be read at a glance by the desk clerk.



Maid signal notifies clerk and housekeeper where maids are working and when rooms are made up. Enables clerk to signal what rooms are to be done.



Morning call—"message for you" signal frees busy switchboard, wakes guest with buzzer, bell or chimes. "Message for you" light stays on until acknowledged.



Honeywell designed Systems Control Center for hotels, called the Hotel-Motel Master*, puts up to 24 separate functions under the control of one man at a hotel's front desk.

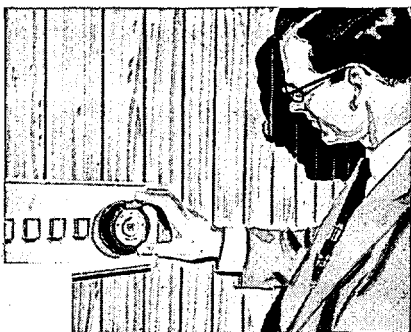


Fire detection signal rings buzzer at the front desk. Flashing light indicates origin of the fire, enables clerk to send help immediately to the area.

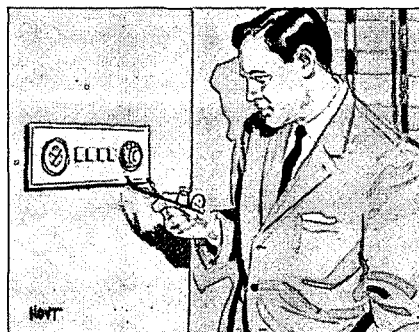


Centralized controls for air conditioning, heating, lights, TV allow clerk to shut off equipment when guests leave, turn it on just before room is occupied.

*T. M.



Guestroom temperature control (Honeywell Wall Mounted Thermostat) allows each guest to select the temperature at which he feels most comfortable.



*Weatherscope** automatically signals an up-to-date weather forecast to each guest, enabling them to dress according to the weather. Clerk operates master signal only.



Hold-up alarm operated by foot notifies house detective and others of trouble at the front desk, brings help quickly in case of emergency.



FROM INDIANA- “the strength of Gibraltar”

Like the famous landmark of their slogan, the crisp new Chicago office building of the Prudential Insurance Company of America will owe much of its durability to limestone — limestone from the quarries of Indiana.

And there's more than new buildings coming from the Hoosier state's bustling limestone pits. Watch the skyline for new developments, too. Like the new insulated curtain wall panels — all are now gaining popularity because of their relatively light weight, speed and simplicity of erection. Both the Indiana Limestone industry and members of the architectural profession are today discovering new potentials in this time proven, building material.

*Architects Naess & Murphy
Chicago, Illinois*

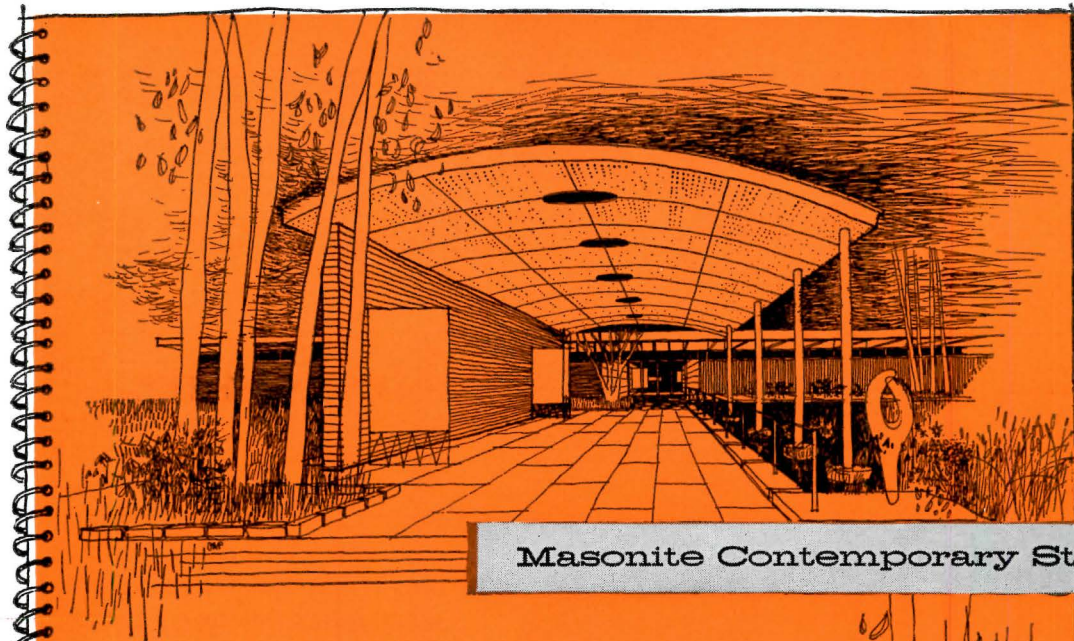


Full specifications on all Indiana Limestone products available.

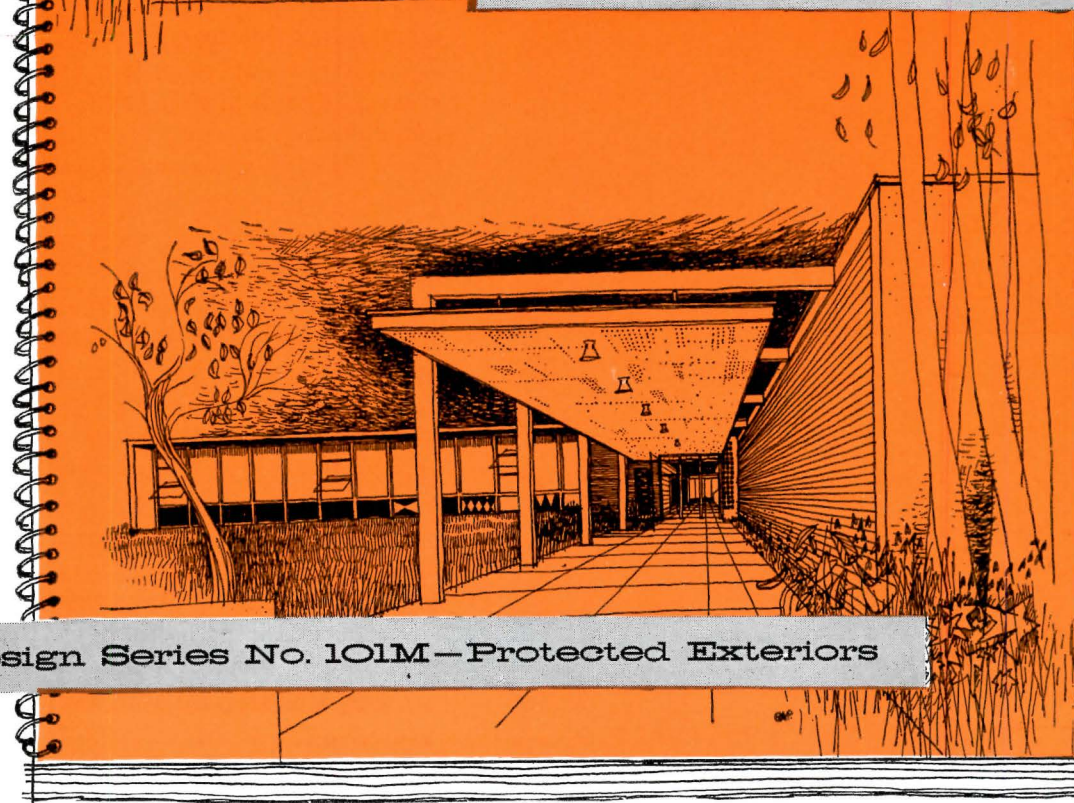
INDIANA LESTONE INSTITUTE

Founded 1932 as a service organization for the architect and contractor.

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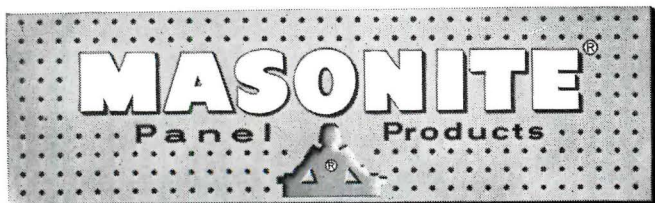
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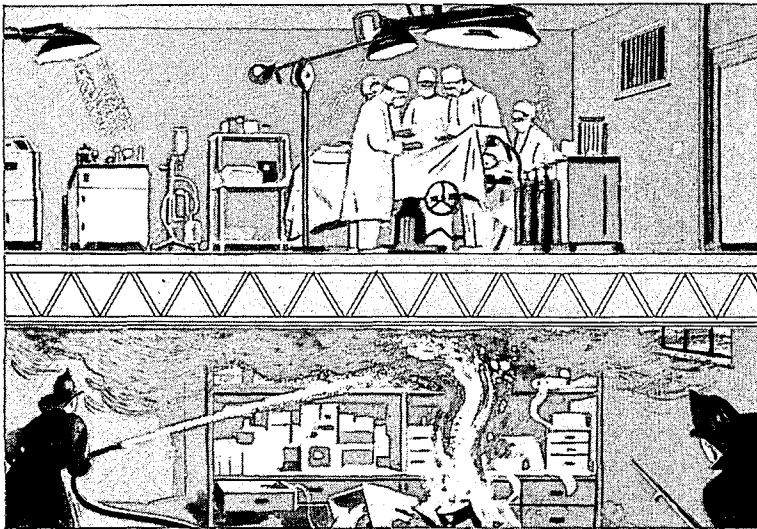


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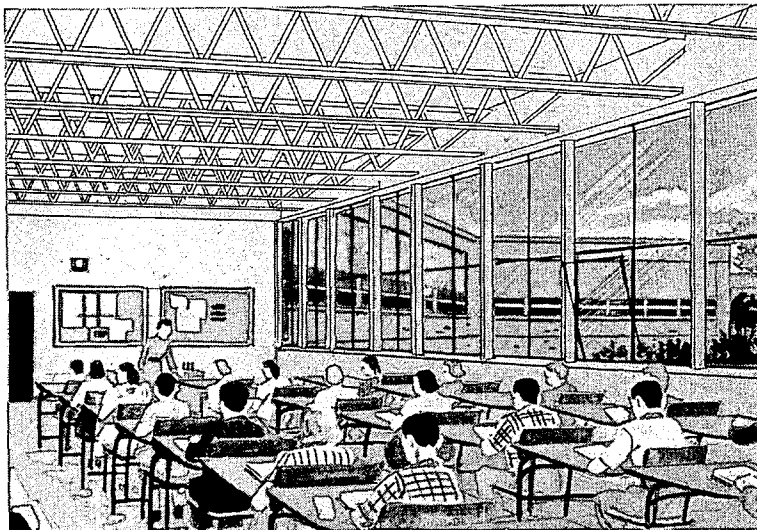
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SIX GOOD REASONS FOR DESIGNING WITH STEEL JOISTS



FIRE-RESISTANCE



NON-SHRINKING, NON-WARPING

FIRE-RESISTANCE—Steel joists in combination with floor slab and plaster ceiling form a barrier with up to four hours' fire-resistance, depending on slab thickness and the type of plaster. And greater fire-safety is of particular importance in multi-story buildings such as hospitals, apartments and schools.

NON-SHRINKING, NON-WARPING—Building maintenance is greatly simplified when you design with joists. They provide non-shrinking, non-warping construction which eliminates sagging floors and cracked ceilings.

COLUMN-FREE SPACE—Steel joists are ideal for long spans such as auditoriums, gymnasiums, garages, stores. And in any building they give a maximum of column-free space.

VIBRATION-RESISTANCE—Good, firm floor construction is assured with steel joists. Adequate stiffness in floors is of special importance in multi-story buildings.

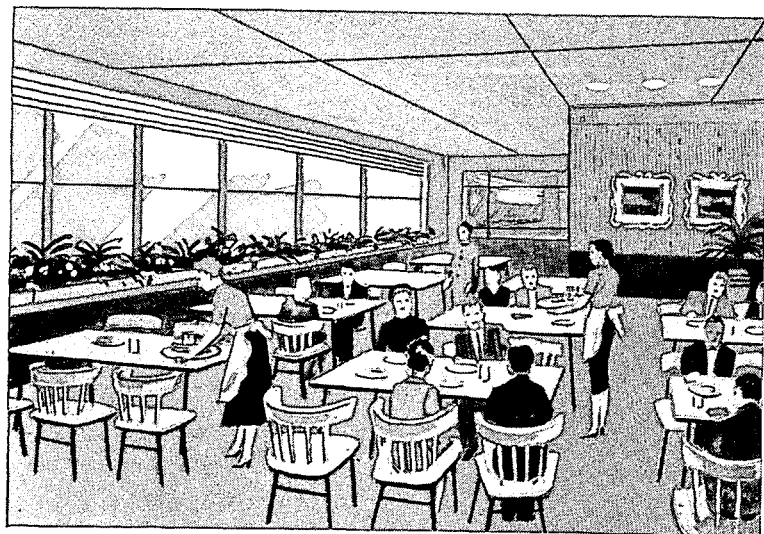
SOUND-RESISTANCE—Bethlehem Joists used with concrete floor slabs and plaster ceilings provide a dead air space. Also there is minimum contact between floor above and ceiling below, effectively dampening the transmission of sound in both directions. Here's a real advantage for hospitals, offices, and apartments.

FAST, ECONOMICAL CONSTRUCTION—Joists arrive at the job fully fabricated and tagged, ready for immediate placing. Two men can easily place small joists, and a simple derrick lifts the larger sizes. The open-webs permit concealment of pipes, conduit and ducts, and simplifies installation of recessed lighting.

These are some of the important advantages you get when you use Bethlehem Open-Web Steel Joists. And Bethlehem Joists are fully approved by the Steel Joist Institute.

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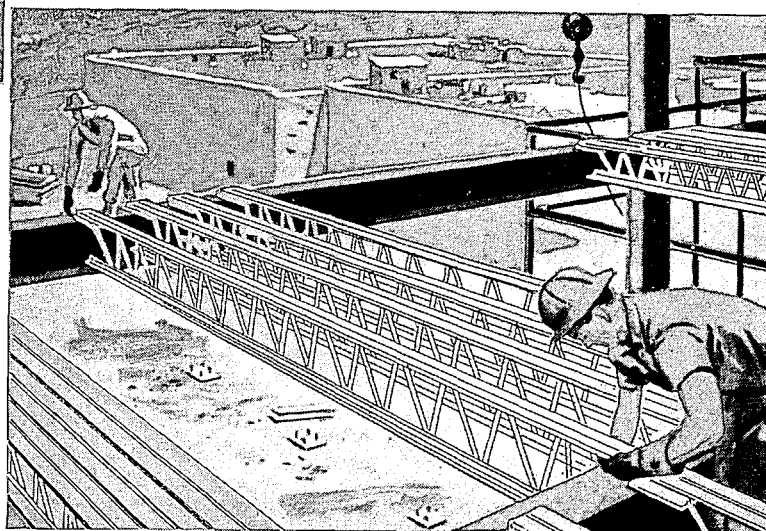
COLUMN-FREE SPACE



VIBRATION-RESISTANCE



SOUND-RESISTANCE



FAST, ECONOMICAL CONSTRUCTION



"Floors instead of doors," "The boys have it, why can't we?" demand the placards. "We want maple!" shout the high school girls in East St. Louis, Illinois. They march en masse into the school board meeting to insist on maple flooring for the girls' gymnasium in the new East St. Louis Senior High School. They explain to the board members their reasons for wanting maple. "Substitute floors hurt their feet," they say, "and provide a poor surface for games." For the small extra cost, they feel maple flooring is well worth it.

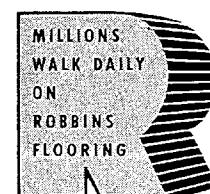
The board listens to their plea and considers, weighs the advantages of maple against substitute flooring... and then changes the plans. The girls win the day.

They argued so strongly because they *play* in gymnasiums and *know* there's a lot of difference in quality between maple flooring and substitutes. And the board had to agree that the big difference in quality was worth the small difference in cost.

Don't you?



Photo courtesy East St. Louis Journal. Faces obscured in accordance with state privacy laws.



PA-258

ROBBINS FLOORING COMPANY

Reed City and Ishpeming, Michigan

Manufacturers of Ironbound* Continuous Strip* Maple Flooring, PermaCushion* Resilient Floors and other hardwood flooring.

*T.M. Reg. U. S. Pat. Off.

Announcing a promotion

... a promotion designed to focus the attention of prospective home builders and homeowners on the importance of color and design in bathrooms. . .

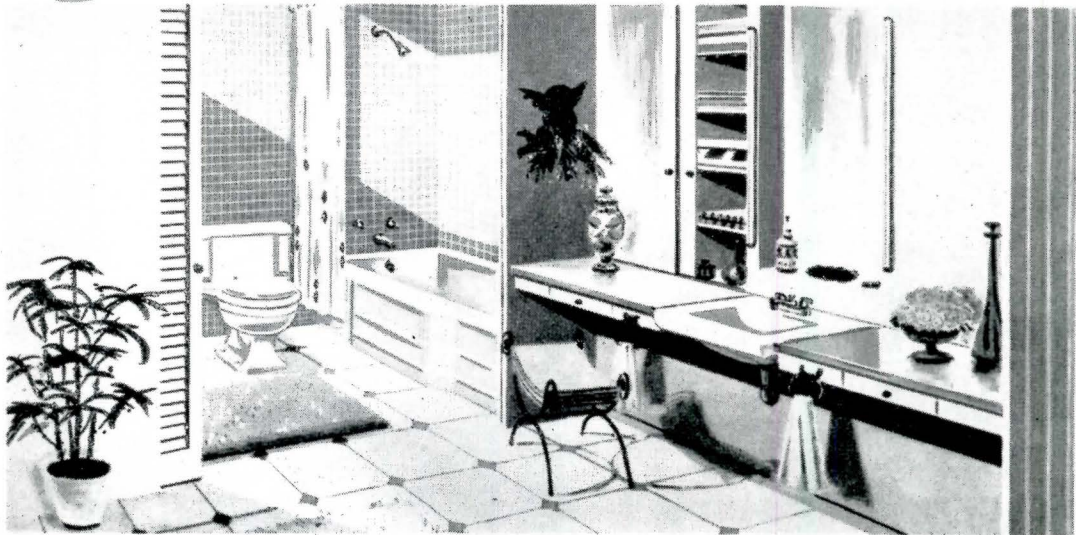
dream of an Eljer bathroom CONSUMER CONTEST

Get your official entry form by going or writing to the Eljer Plumber displaying this sign



\$50,000

in prizes just for dreaming of an **Eljer** bathroom



win An Eljer dream bathroom ...plus an exciting vacation trip

100 BIG PRIZES

FIRST PRIZE—your dream bathroom with a value up to \$4000 built in your home exactly as you designed it. Plus two weeks for two in glamorous Hawaii with all expenses paid.

SECOND PRIZE—your dream bathroom with a value up to \$3500 and a week in Acapulco with all expenses paid for two.

THIRD PRIZE—your dream bathroom with a value up to \$3000 and a week for two in Hollywood with all expenses paid.

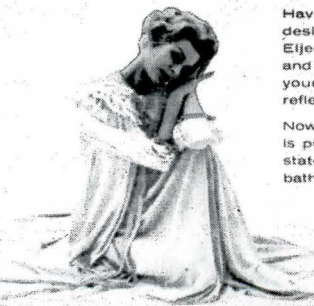
SEVEN-FOURTH PRIZES—dream bathrooms each with a value up to \$2000.

TWENTY-FIFTH PRIZES—convenient Eljer powder rooms each with a value up to \$600.

TEN-SIXTH PRIZES—Easy Combomatic Washer/Dryers each valued at over \$500.

SIXTY CASH PRIZES—ten awards of \$100 in cash and fifty of \$50 in cash.

PLAN NOW TO BE A WINNER...



Have you ever dreamed about a beautiful new bathroom... designed just the way you want it...with gleaming modern Eljer fixtures...stylish, spacious cabinets...soft-toned colors and subdued lighting? A dream bathroom...one that marks your home with distinctive good taste...a bathroom that reflects your own personality...a gracious Eljer bathroom.

Now this dream can come magically alive. All you have to do is put your dreams down on paper. If your simple sketch and statement are selected as the winner, Eljer will build your bathroom for you...exactly the way you dreamed it.

How to enter... Stop in or call any of the nearby Eljer plumbers listed in the column on the left of this ad and obtain an official entry blank. You'll find that it contains fun instructions, many helpful suggestions and complete rules. Or, if you prefer, write to Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh 22, Pa.

ELJER
DIVISION OF THE MURRAY CORPORATION OF AMERICA

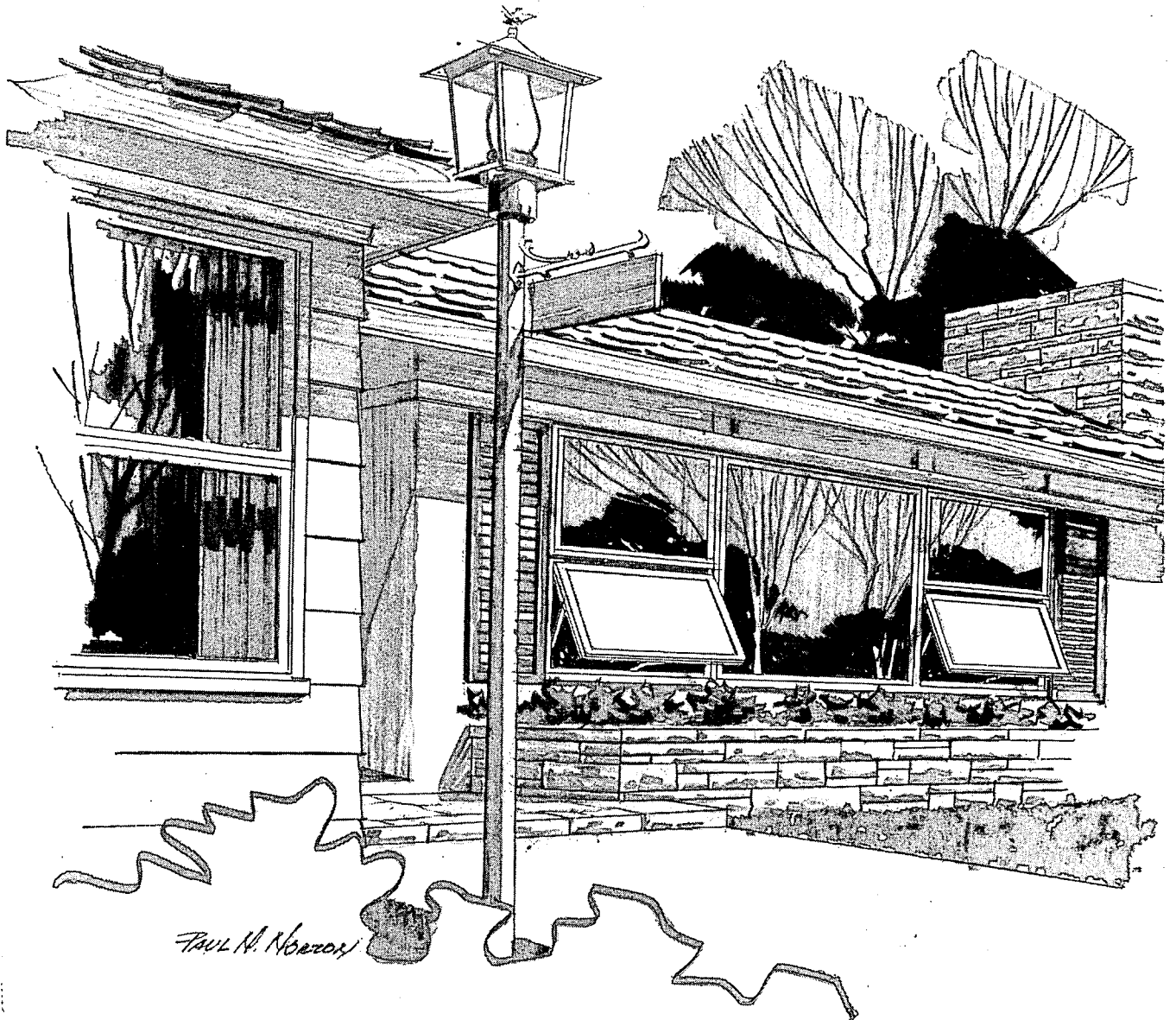
or write Advertising Department
Eljer Division
Three Gateway Center
Pittsburgh 22, Pennsylvania

This first big national contest ever designed to point directly to the convenience and beauty that can be enjoyed when bathrooms are correctly styled to appeal to today's homemakers has already awakened tremendous interest in the industry.

It is another Eljer contribution to stimulate widespread interest in home modernization and properly designed new homes. Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh, Pennsylvania.

ELJER
DIVISION OF THE MURRAY CORPORATION OF AMERICA

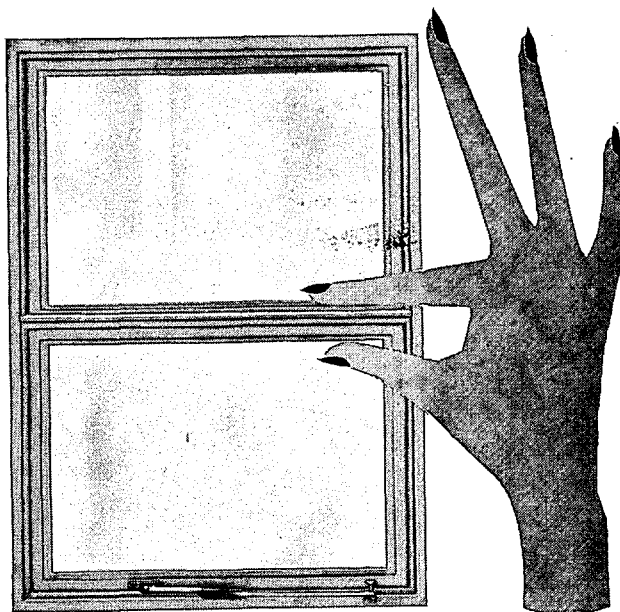
new



FOR THE ARCHITECT OR DESIGNER: new, slim joining mullion provides the advantage of attractive horizontal lines.

FOR THE BUILDER: Twin lights in Single Frame speed construction.

FOR THE HOME OWNER: The "double-hung" look with all the conveniences of modern awning windows.



Pella® twinlite

the awning window with young ideas

Composed of a fixed window at the top and a ventilating unit of equal size at the bottom, PELLA TWINLITE is available in seven modular sizes, including 32" x 44" frame widths. In addition a picture window in combination with a ventilating unit is also available.

Features like these are standard equipment: self-storing screens, in-the-sash storm panels, underscreen operator with exclusive Glide-lock, and complete weatherstripping. And!...they can be installed on their sides to form beautiful casements with narrow mullions.

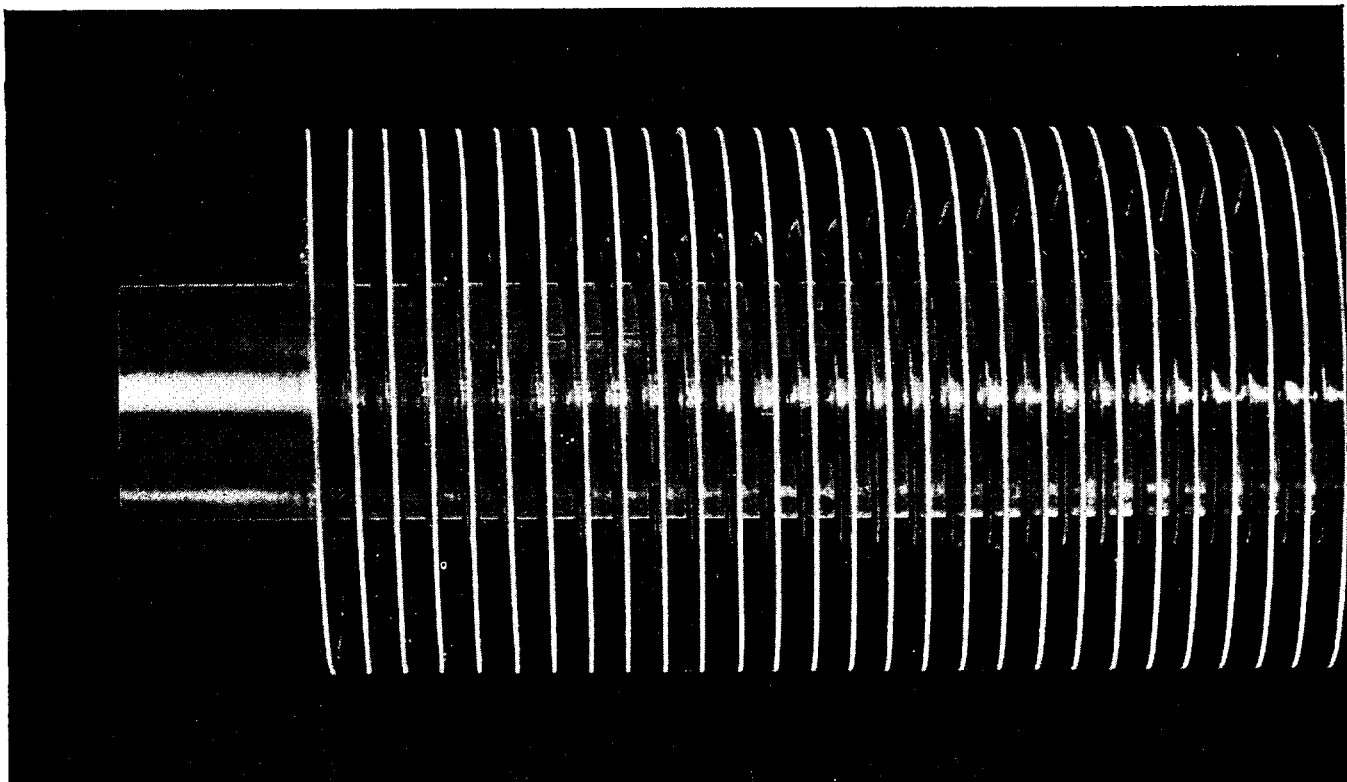
For complete details, check and mail coupon today.



ROLSCREEN COMPANY Dept. J-18, Pella, Iowa
Please send detailed literature describing Pella's new TWINLITE combination fixed and ventilating windows.

Name _____
Address _____
Company _____
Title _____
City _____ Zone _____ State _____





AEROFIN

Smooth-Fin Coils offer you

**Greater Heat Transfer
per sq. ft. of face area**

**Lower Airway Resistance
— less power per c.f.m.**

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.

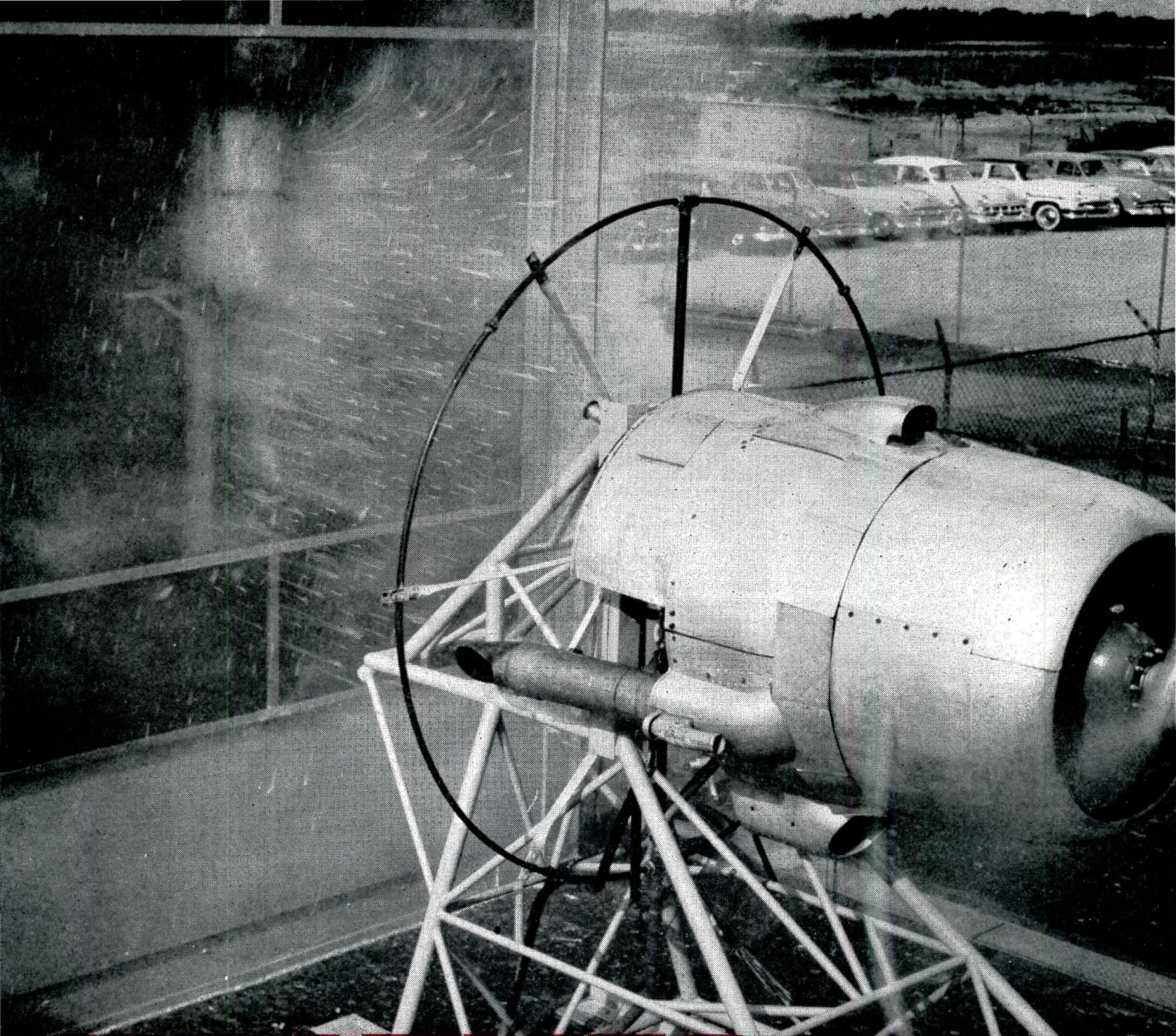


Write for Bulletin S-55

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

*Aerofin is sold only by manufacturers of fan system apparatus.
List on request.*



WEATHERBAN

BRAND CURTAIN WALL SEALER

Photo courtesy of Connecticut General Life Insurance Co.
Test conducted by General Bronze Corporation

New curtain wall sealer resists hurricane fury!

Wind hits a screaming 130 m.p.h.

Rain whips out in a 12-inch-per-hour deluge. The curtain wall unit shudders, bends under this man-made blast . . . *but doesn't leak.* WEATHERBAN Brand Curtain Wall Sealer seals its seams.

The purpose of this torturing, simulated weather test? To *prove* the weather-tightness of this WEATHERBAN sealed curtain wall, even under the lash of hurricane fury.

This new curtain wall sealer is a two-part polysulfide rubber-based compound. It cures *chemically* without shrinkage into a durable, solid rubber seal. It stretches, compresses with wall movement, adheres strongly to glass, stone and metal.

Here's why WEATHERBAN Sealer is being picked to seal new buildings . . . why it's being chosen also to repair leaks in older buildings originally sealed with conventional sealers.

SEE WHAT WEATHERBAN SEALER OFFERS YOU!

Consult 3M Research. Send for free brochure. Write on your company letterhead to: 3M, Dept. M-2, 417 Piquette Ave., Detroit 2, Michigan.



MINNESOTA MINING AND MANUFACTURING COMPANY • ADHESIVES AND COATINGS DIVISION

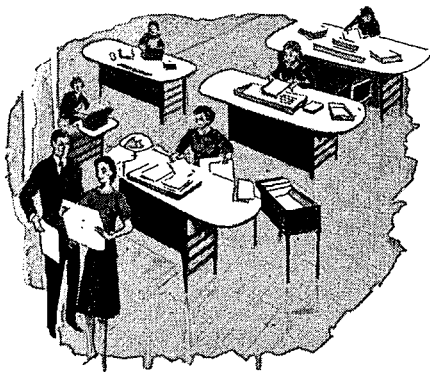
417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • EXPORT: 99 PARK AVE., NEW YORK 16, N. Y. • CANADA: P. O. BOX 757, LONDON, ONT.



The Johnson's Wax
Administration Building, Racine, Wisconsin
Architect: Frank Lloyd Wright

HERE'S THE EVIDENCE

The original WRIGHT floors in this famous building,
installed 18 years ago... are still "young"!



A busy office is the perfect testing lab for on-the-job performance of a flooring. Wright passes with ease... surpasses expectation. There's still a long life ahead for this 18-year-old floor (of course, it's waxed regularly).

For projects requiring colorful, luxurious flooring that's quiet, comfortable and easily maintained, specify Wright Rubber and Vinyl Tile with confidence. There's plenty of proof that Wright is not only one of the most beautiful but also the most practical of floor tiles.

WRIGHT MANUFACTURING COMPANY

A Division of Mastic Tile Corporation of America
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

WA36



Here are some of the fine MARS drafting products, imported from West Germany, made to meet the highest professional standards. • Bright-hued LUMOCHROM pencils come in 24 colors for color-coded drafting and perfect reproduction. • LUMO-

GRAPH graphite drawing pencils come in 19 degrees. Some degrees available with erasers, some with special chisel points. • TECHNICO lead holders for color and black graphite drawing have new sure-hold finger grips, with degree markings for quick

identification. Also available with clips for pocket use. • NON-PRINT pencil and leads let you make notes and sketches that will not reproduce. • Pencil sharpeners come in STANDARD and "DRAFTSMAN" models; latter with adjustable point length feature.

your brain's best friends

Thoughts needn't struggle over mechanical hurdles to get down on paper. Tracings convey your ideas and designs most clearly when your drafting is concise and sharp. When it reproduces perfectly.

Like thousands of your col-

leagues, you will find the shortest distance between idea and execution in MARS drafting products. They are your brain's best friends.

For the engineer, architect and draftsman who demands direct and accurate expression, it's MARS—

clear across the board! Ask for these quality drafting aids at your dealer's.

MARS
J. S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

MEMO:

Dear Bill:

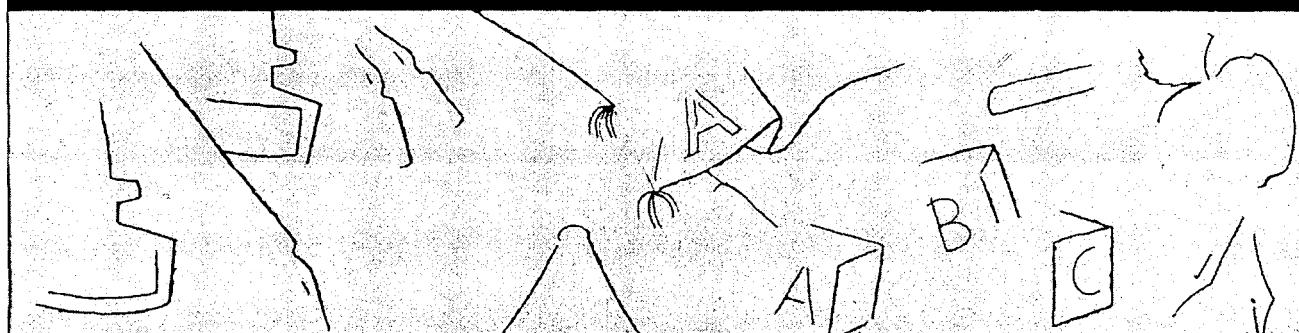
If you are building a new school or planning to renovate an old one, you unquestionably need the new Anemostat School Catalog.* Suggest you write for your copy to Anemostat Corporation of America, 10 East 39th Street, New York 16, N. Y.

Tom

ANEMOSTAT ALL-AIR HIGH VELOCITY SYSTEMS FOR SCHOOLS



A NEW DEVELOPMENT FOR HEATING AND VENTILATING



* Contains performance and dimension data, control diagrams, everything you need to specify.

© Anemostat Corporation of America

AC1360

"I always
specify
Hako
floor tile"



Builder: "Individuality. That's what the buyers want. Got any more suggestions?"

Architect: "Yep—floors. Give them color, pattern. A real personal effect."

Builder: "How do you do it within MY cost structure? I've got to meet competitive prices!"

Architect: "Easy. Use asphalt tile—the colors and floor patterns make every home different inside. And the material is economical."

Builder: "Sounds good. We'd have no trouble putting it in and I'll have something that gives me a selling plus. I suppose any tile will do the job?"

Architect: "Oh no! I want you to be satisfied with color, price and value. That's why I always specify HAKO."

HAKO BUILDING PRODUCTS

A DIVISION OF MASTIC TILE CORPORATION OF AMERICA
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

Asphalt Tile • Vinylflex • Polykrome • CorkAtile
Parquetry • Coronet Plastic Wall Tile



Hako Building Products
Division of Mastic Tile Corp. of America
Dept. H9-2, P.O. Box 128, Vails Gate, N. Y.
Please send me full details and specification data
on Hako Asphalt and Vinyl-Asbestos Tile.

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

For best results we recommend
Milmark® wax...cleaner...adhesives

INSULATED METAL WALLS are Skillfully



Eastland Shopping Center in the northeast section of Detroit, Michigan. 56,000 Sq. Ft. of Mahon Insulated Metal Curtain Walls and 48,000 Sq. Ft. of Mahon Steel Roof Deck were employed in the construction of this outstanding and colorful structure. Victor Gruen & Associates, Architects. O. W. Burke Co., Gen. Contrs.



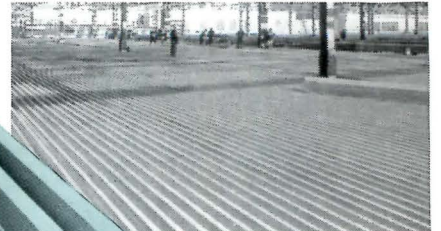
ELECTRIFIED M-FLOORS

Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.



ACOUSTICAL and TROFFER FORMS

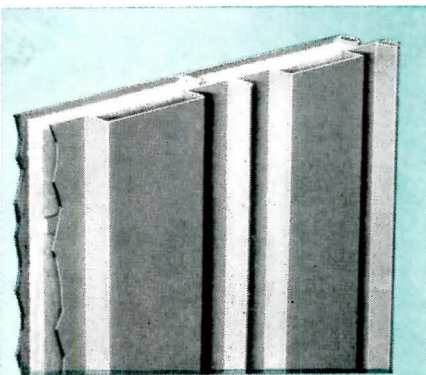
Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.



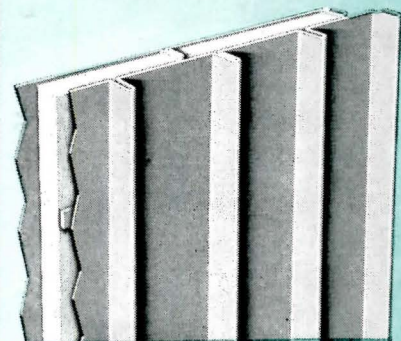
CONCRETE FLOOR FORMS

Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

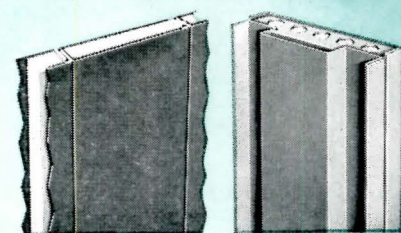
Employed to Lend Color and Attractiveness to Exterior of Mammoth Shopping Center!



MAHON FLUTED WALL
FIELD CONSTRUCTED



MAHON RIBBED WALL
FIELD CONSTRUCTED



FLUSH FLUTED
MAHON PREFAB WALL PANELS

The low-cost permanence and attractiveness of Insulated Metal Curtain Walls are today being designed into an ever broadening range of building types. In the Eastland Shopping Center, illustrated at the left, you see an unusual building in which Mahon Metal Curtain Walls in harmonizing colors were used extensively in combination with other materials to produce an attractive and colorful exterior.

Some of the country's outstanding architects have employed Mahon Insulated Metal Curtain Walls skillfully and to good advantage, costwise, in producing striking exterior design effects in office buildings, shopping centers, schools, armories, military barracks, sports arenas, parking garages, warehouses, industrial buildings of all types—including powerhouses, and some important monumental buildings.

Metal Curtain Walls with exterior plates of embossed or colored aluminum, stainless steel, or cold rolled steel painted, employed in combination with brick, ornamental stone, glass block or other materials offer unlimited possibilities in architectural treatment of exterior design. Bright metal, or colored metal, provides the designer with the means of individualizing and creating distinctiveness in almost any type of building.

In Mahon Insulated Metal Walls, vertical joints are invisible—symmetry of pattern is uninterrupted across the wall surface . . . and, the field constructed walls can be erected up to sixty feet in height without a horizontal joint. These two design features, which are extremely important from an appearance standpoint, were engineered into Mahon Insulated Metal Curtain Walls to give you a finer appearing wall surface with a continuous pattern free from unsightly joints.

You'll want to investigate these Mahon "better look" features before you select a metal curtain wall for any building.

See Sweet's Files for information or write for Catalogue W-58.

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago
Representatives in all Principal Cities

M A H O N



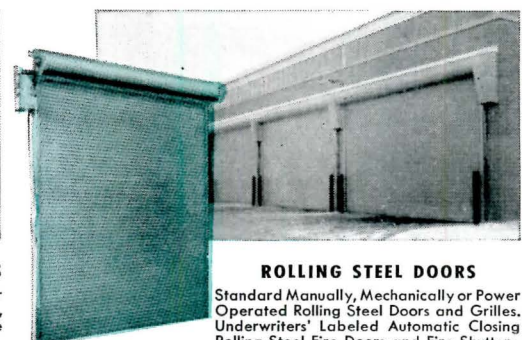
STEEL ROOF DECKS

Standard Double Rib, Wide-Flange Double Rib, and Long Span M-Decks, which can be furnished with perforated surface and fitted to provide an efficient acoustical ceiling.



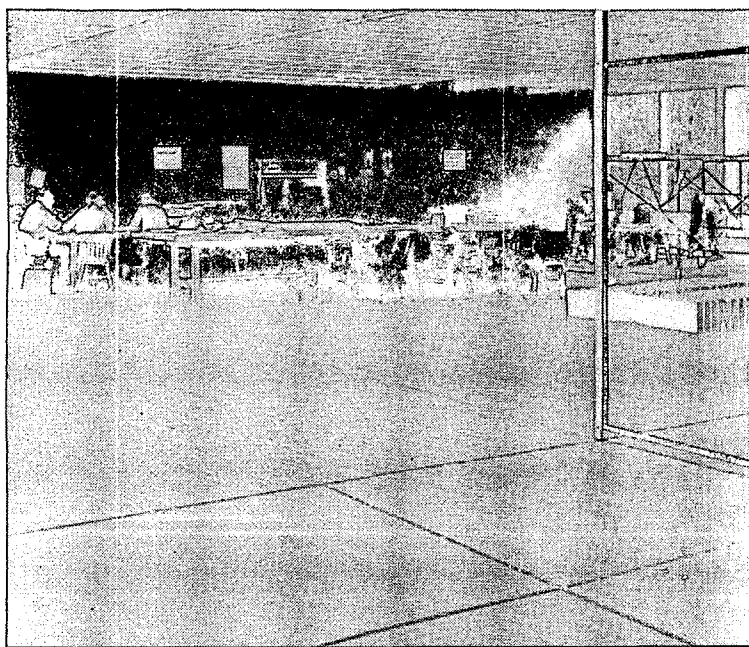
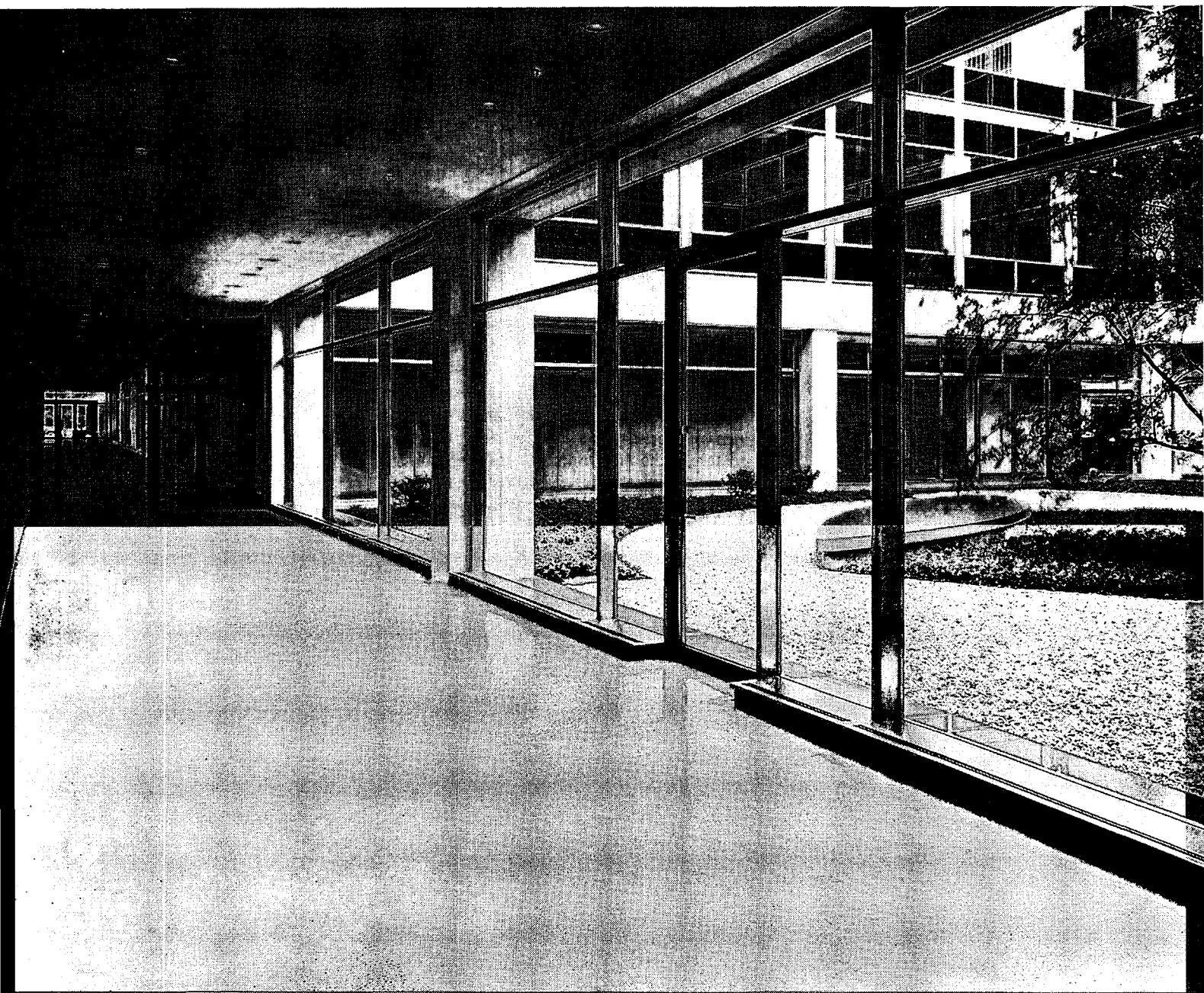
UNDERWRITERS' RATED FIRE WALLS

Mahon Metalclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.



ROLLING STEEL DOORS

Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.



Connecticut General Life Insurance Company,
Bloomfield, Conn.
architects: Skidmore, Owings and Merrill, N.Y.C.
consultant on interiors: Florence Knoll
Knoll Associates, Inc., N.Y.C.
general contractors: Turner Construction
Company, N.Y.C.

LINOTILE PRE-TESTED IN MOCK-UP

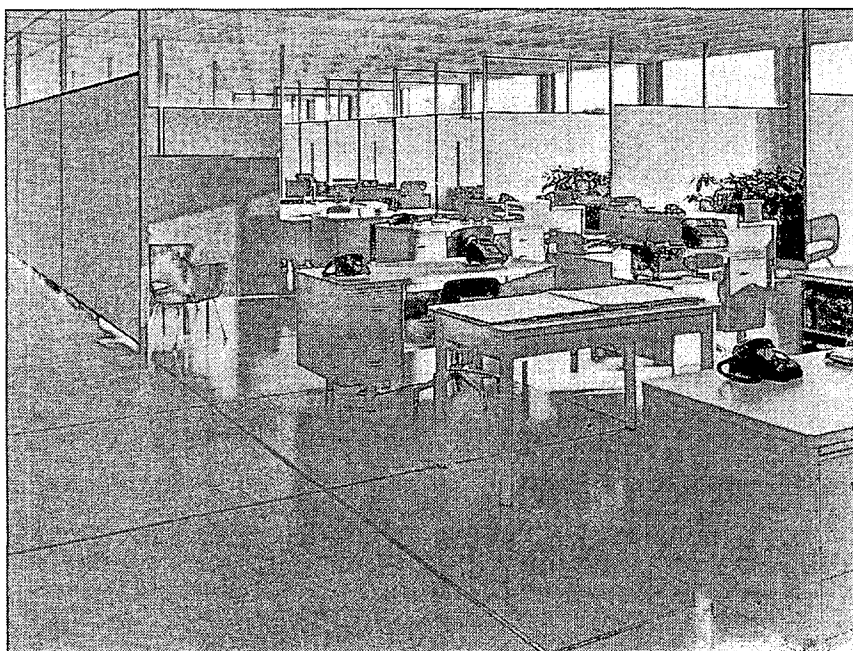
← In this detailed, full-scale mock-up built by the general contractor, structural materials were subjected to painstaking examination for long periods. Of the many resilient floors tested here, Armstrong Linotile proved itself by every measure of appearance and function. Especially impressive was the evidence that Linotile's beauty is actually heightened by use and maintenance. Despite the fact that Linotile increased flooring costs 4% over other materials considered, the test data convinced Connecticut General officials that the extra cost was a sound investment.

LI INSU ANC COM A Y

flooring spec: Armstrong Linotile

LASTING BEAUTY

The recently completed headquarters of the Connecticut General Life Insurance Company have been cited by the AIA as one of the "Ten Buildings in America's Future." The Armstrong Cork Company is proud that Armstrong Linotile—a floor which has been tested in use for many years—was chosen for virtually all the important areas of this most modern building. A single coloring, No. 169 Graphite Gray, is used throughout. Its subtle graining makes a perfect background for the modern architectural features. And because Linotile is regarded as one of the most durable and serviceable of all resilient floors, it will retain its beauty for many years to come.



EASE OF MAINTENANCE

Even in busy work areas, maintenance is always fast and economical because Linotile is specially processed for easy care under severe traffic conditions. Because Linotile is very dense, it has remarkable resistance to abrasion, indentation, and staining. Heavy furniture won't mar the good looks and smooth surface of Linotile. Employees are pleased with the floors because Linotile is comfortable and quiet underfoot, restfully diffuses light.



Armstrong Linotile—an exclusive Armstrong floor—has an enviable record of more than 40 years for ease of maintenance, exceptional durability, and decorative versatility. Linotile should not be confused with linoleum cut into blocks. A full $\frac{1}{8}$ " thick, the wearing surface extends through the entire thickness of the tile; it has no felt or burlap backing. Linotile is capable of withstanding furniture loads up to 200 lbs. per sq. in. without showing permanent indentation. It comes in two stylings—an unusually bold marbleizing and a subtle tone-on-tone effect; in many colors and sizes; and may be installed on all types of suspended subfloors.

Armstrong makes all types of resilient floors and can therefore offer unbiased recommendations for every flooring need. For information, samples, specifications, design assistance, call the Armstrong Architectural-Builders Consultant in an Armstrong District Office, or write direct to Armstrong Cork Company, 702 Watson St., Lancaster, Pennsylvania.

Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)

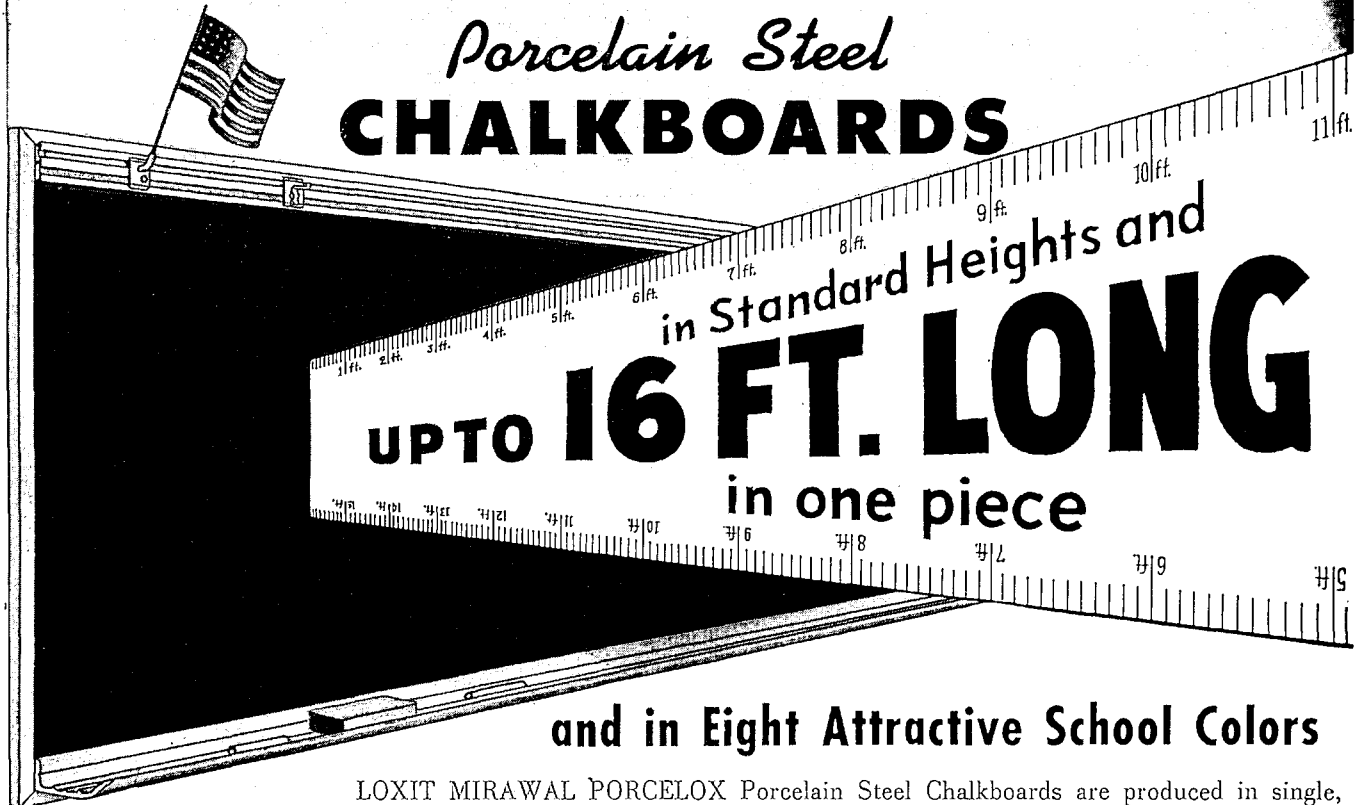
Decoray® Linoleum Tile Asphalt Tile, $\frac{1}{8}$ " (A, B, C, D) Linoleum, light gauge Asphalt Tile, $\frac{3}{16}$ " (A, B)	20¢ to 35¢	Linoleum, standard gauge Asphalt Tile, $\frac{3}{16}$ " (C, D) Linoleum, ("Battleship") Greaseproof Asphalt Tile Cork Tile, $\frac{3}{32}$ "	35¢ to 45¢	Corlon® (Sheet Vinyl) Linoleum, $\frac{1}{8}$ " Cork Tile, $\frac{1}{8}$ " Excelon® Tile (Vinyl-Asbestos) $\frac{1}{8}$ "	45¢ to 60¢	Rubber Tile, $\frac{1}{8}$ " Cork Tile, $\frac{3}{16}$ " Linotile® Corlon (Hydrocord® back)	60¢ to 70¢	Custom Corlon Tile (Homogeneous Vinyl) Cork Tile, $\frac{3}{32}$ ", $\frac{1}{8}$ " Cork Tile, $\frac{5}{16}$ " Rubber Tile, $\frac{3}{16}$ "	70¢ to 90¢	Custom Vinyl Cork Tile : Imperial® Custom Corlon Tile	95¢ to \$1.30
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Another Loxit First!

LOXIT® MIRAWAL® PORCELOX

Porcelain Steel

CHALKBOARDS



and in Eight Attractive School Colors

LOXIT MIRAWAL PORCELOX Porcelain Steel Chalkboards are produced in single, straight-line continuous electric furnaces to make the long lengths possible. The vitreous porcelain surface is fused to the nickered steel sheet at a temperature of 1600°F, making it unexcelled as a porcelainized metal coating for all chalkboard uses.

Check these advantages!

1. TWO TYPES AVAILABLE

LOX-85 NU-VICTORY LOXIT MIRAWAL PORCELOX—a light gauge porcelain steel chalkboard face sheet laminated to $\frac{3}{8}$ " "structo-core" with a porcelainized steel backing. Available up to 4' x 16'—in one piece. LOX-86 NU-IMPERIAL LOXIT MIRAWAL PORCELOX—a light gauge porcelain steel chalkboard face sheet laminated to $\frac{1}{4}$ " exterior grade plywood with a rust resistant metal backing. Available up to 4' x 12'—in one piece.

2. DURABLE AND PERMANENT

The vitreous inorganic porcelain surface will not craze or crack. Shrinkage and expansion is negligible. Will take magnets.

3. SCRATCH AND IMPACT RESISTANT

The flint-hard, glass-smooth porcelain surface provides high resistance against scratching and marring. Tests at least 6.5 on scale of Hardness of Minerals.

4. SANITARY AND EASY TO CLEAN

The glass-hard porcelain surface is impervious to acids, odors, grease and solvents. Easily cleaned with a damp cloth.

5. FIREPROOF CONSTRUCTION

LOXIT MIRAWAL PORCELOX chalkboards are fireproof. Will not support combustion.

6. LIGHT WEIGHT—SIMPLE TO INSTALL

The thinness of gauge which is adequate for all chalkboard requirements makes them light in weight, simple to install and easy to handle during erection.

7. EIGHT BEAUTIFUL FADEPROOF SCHOOL COLORS

Rite Spring Green, Rite Dark Green, Rite Gray, Rite Tan, Rite Coral, Rite Blue, Rite White (Ivory), and Rite Black.

8. MAINTENANCE FREE—ECONOMICAL

They are maintenance free except for cleaning. Will meet any reasonable budget both in the construction of the building and in its maintenance.

9. TRIMMED

Available completely trimmed ready to set in place—with or without the use of the Loxit Miracle Adjustable Chalkboard Setting System.

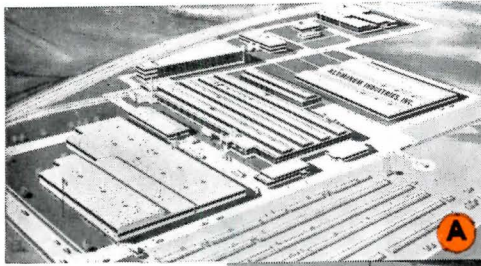
Write today for literature and sample panel.

LOXIT SYSTEMS, INC.

1217 W. WASHINGTON BLVD., CHICAGO 7, ILLINOIS

Copyright 1957,
Loxit Systems, Inc.






**"Frank
Adam
busduct added
to the efficiency,
economy and
flexibility of our
plant operations"**

"Based on our experience," says B. E. Robinson, master mechanic of Aluminum Industries, Inc., of Cincinnati, O., "I certainly recommend Frank Adam Busduct to any company interested in maximum production efficiency."

"Frank Adam Busduct added substantially to the efficiency, economy and flexibility of our plant operations. It enables us to make quick changes in plant layout without disrupting production, cuts maintenance costs to a minimum and affords other economies by reducing power losses and voltage drop to a minimum."

Take a leaf from Mr. Robinson's book of experience. Give your clients power distribution geared to their needs. Specify Frank Adam Busduct, the modern system of power distribution in all your future plans. Consult Sweet's architectural or contact your nearest  representative for additional information.

A General view of plant of Aluminum Industries, Inc., at Cincinnati, O.

B Selden High of Sullivan Electric Company, electrical contractor of Cincinnati, O., discussing Frank Adam Busduct with Clifford Manderschied.

C Interior view of the Aluminum Industries plant showing Frank Adam Hi-Efficiency Feeder Duct with a Shuttrak tap off switch to plug-in duct.



FRANK ADAM ELECTRIC COMPANY

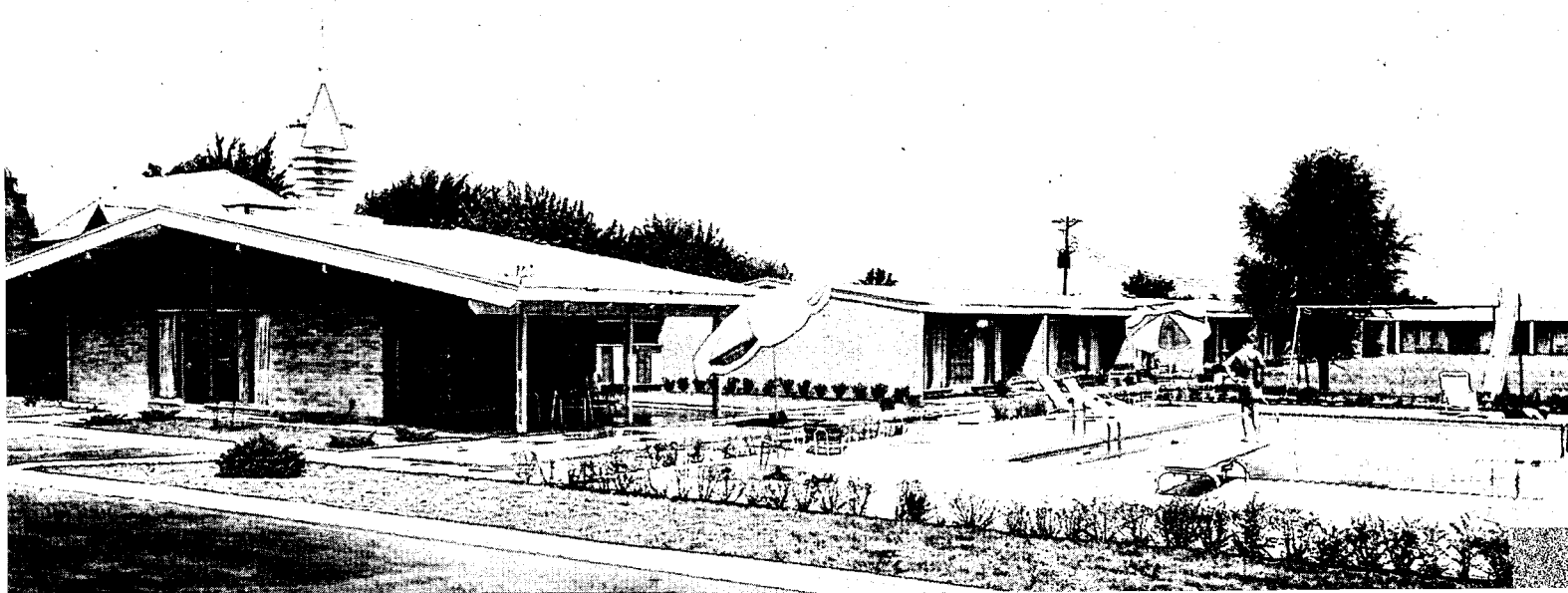
BOX 357, MAIN P. O. • ST. LOUIS 3, MO.

makers of

*busduct • panelboards • switchboards • service equipment
safety switches • load centers • Quikheter*



Howard Johnson Motor Lodge, St. Louis, Mo. (Office interior above).
 Architects: Carl Koch & Associates, A. I. A., Cambridge, Mass. Builder: C. Rallo Co., Inc., St. Louis, Mo.



Howard Johnson Motor Lodges designed with Insulite Roof Dec

In St. Louis, and at Huntington, L. I., New York, travelers now find luxurious new Howard Johnson Motor Lodges. Rooms are light, airy, and spacious. A most striking interior feature is red-beamed white ceilings . . . achieved with Insulite Roof Deck.

To make best use of these Motor Lodge sites, Architects Carl Koch & Associates, A.I.A., have created a single-loading one-story design at St. Louis; a two-story plan at Huntington. After careful comparative study of decking materials, the architects selected Insulite Roof Deck for

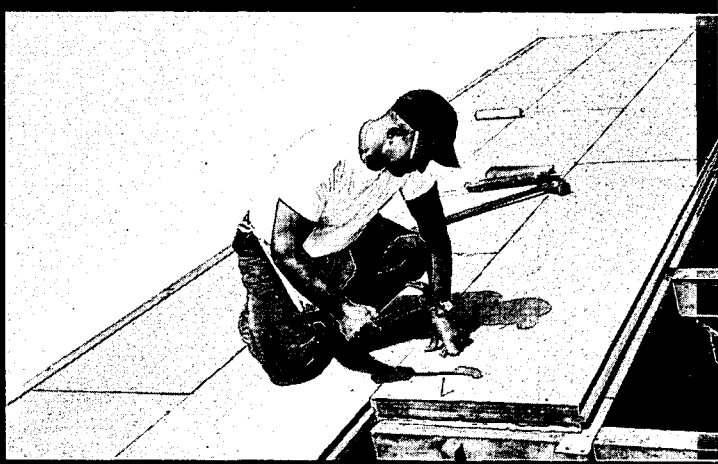
both Motor Lodges. Why? Because it cost least . . . looks best . . . *works* best.

As to cost, think of this: each 2' x 8' Insulite Roof Deck panel provides decking stout enough to carry any normal rooftop traffic . . . *plus* a built-in vapor barrier . . . *plus* finest insulation . . . *plus* a finished, painted ceiling . . . all in one. Carefully detailed V-grooved joints help make ceilings truly handsome; and tough white paint gives excellent light reflection.

Want further facts on Insulite Roof Deck? Write us—Insulite, Minneapolis 2, Minnesota.



Room Plan "A" is largest of four standard room plans developed by the architects for Howard Johnson Motor Lodges. Designs feature many built-ins: headboards, desks, luggage racks, etc. Open-beam Insulite Roof Deck ceilings add height, light and character.



Application of Roof Deck proceeds with astonishing speed, cutting roof and ceiling costs to rock bottom. Motor Lodges described here have 3" thick panels, with built-up roofing and marble chips. 2" thickness also available. Tongue-and-groove joints make vapor-tight seal.

build better, save labor, with
INSULITE®
Roof Deck

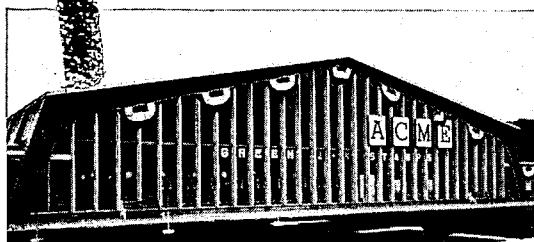


Insulite, made of hardy Northern wood. Insulite Division, Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

"spaciousness,
flexibility,
more effective
merchandising"
with **Rilco**



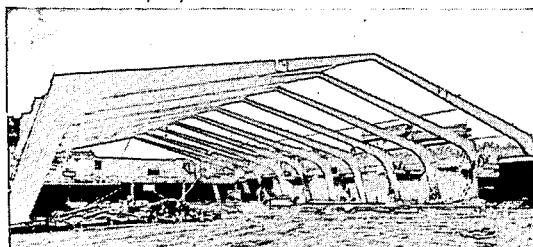
Acme Supermarket, Clifton Heights (Philadelphia)
Architects: Kelly & Gruzen, New York
Contractor: Wallace Engineering and Construction Company, Bryn Mawr (Philadelphia)



Rilco laminated arches span 125' 7 $\frac{1}{8}$ " with a center height of 30' 11" and a wall height of 18' 11". Structural section is 11" x 41 $\frac{3}{8}$ ".

Rilco Deck spans the 16' arch spacing to provide both roof construction and interior ceiling finish.

"Our schedule for erection was six weeks but these members were erected in three weeks, saving us half the scheduled erection time," writes the contractor. "The precision of fabrication made it very easy for us to erect these members. Our client is very pleased with their appearance" . . . Wallace Engineering and Construction Company.



RILCO
works wonders with wood

Say the architects: "The primary purposes for the use of these Rilco laminated members (in the Acme supermarket) were to achieve a large open commercial area without hindrances of columns, etc.; to permit, through this spaciousness, changes in floor layouts with the utmost flexibility, more effective merchandising techniques and ease of customer traffic."

And the Rilco precision-engineered members saved time ". . . helpful for commercial projects, particularly when speed of erection is a vital factor in meeting an opening deadline date."

Because Rilco laminated members are custom-built for every job, they allow wide freedom of design, blending well with any styling concept. In addition, their proved economy of time and money plus their dramatic appearance and warmth win kudos from clients.

And the economy and beauty continue on down through the years — for Rilco members won't rust, corrode or vibrate, withstand impact or temporary overload without permanent damage . . . actually mellow, becoming more beautiful with age.

Such Rilco members — engineered to your specification, your design, may help you with a future problem. For more information write your nearest Rilco office.

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Photo at Right: Electric Furnace used in Foundry Practice.



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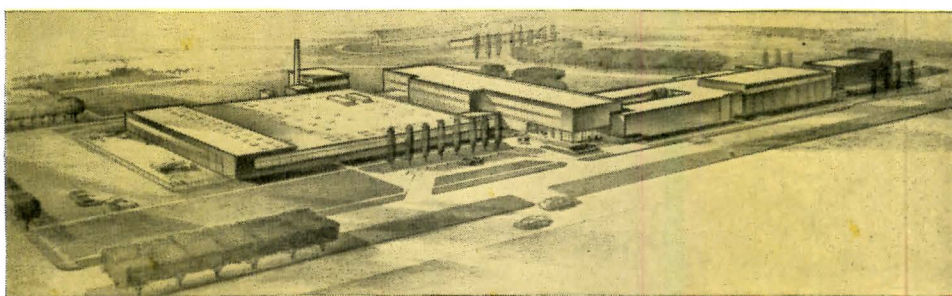
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GENERAL CONTRACTOR — Joseph J. Duffy

HEATING CONTRACTOR — William Adams Engineers, Inc.

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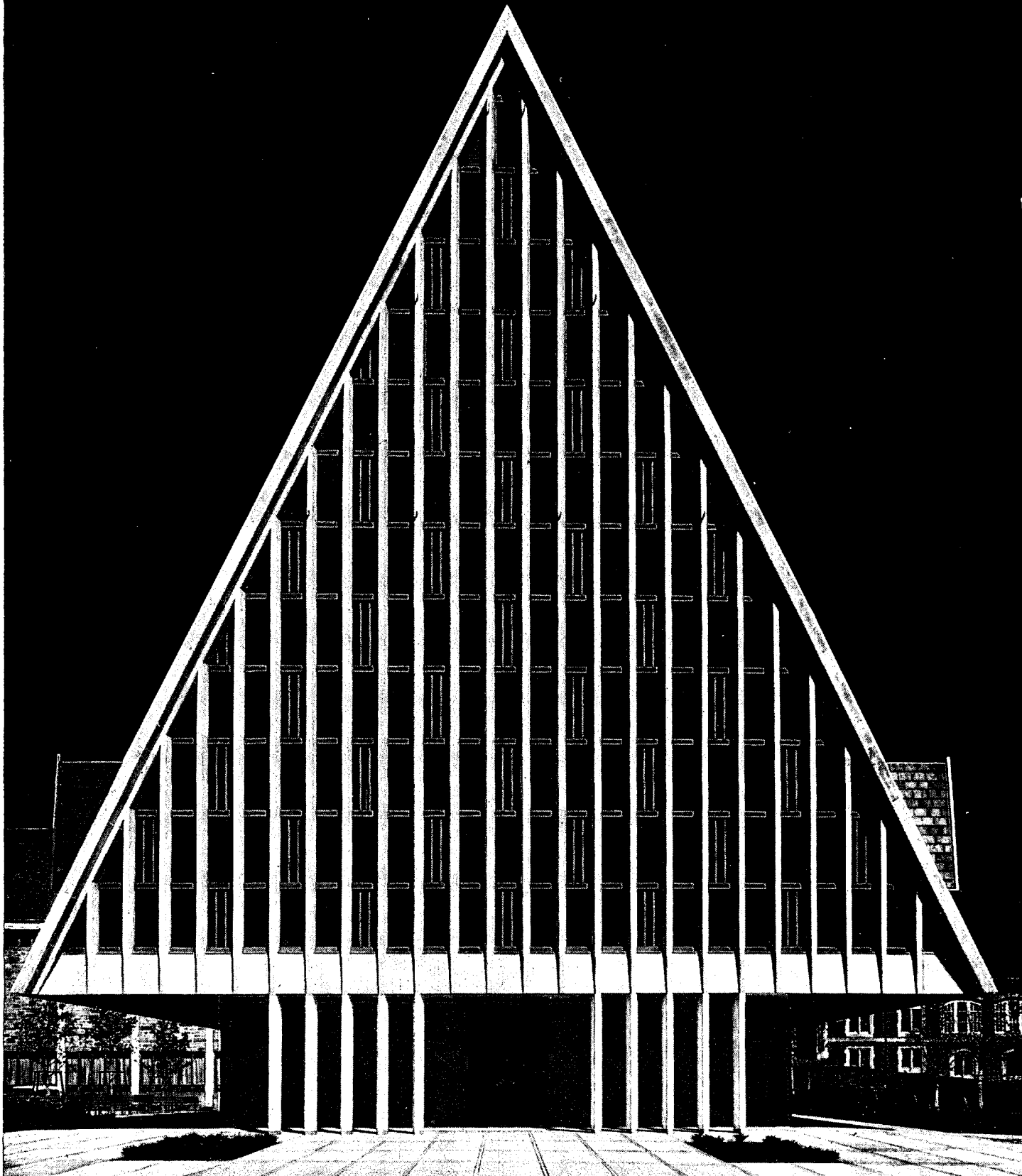
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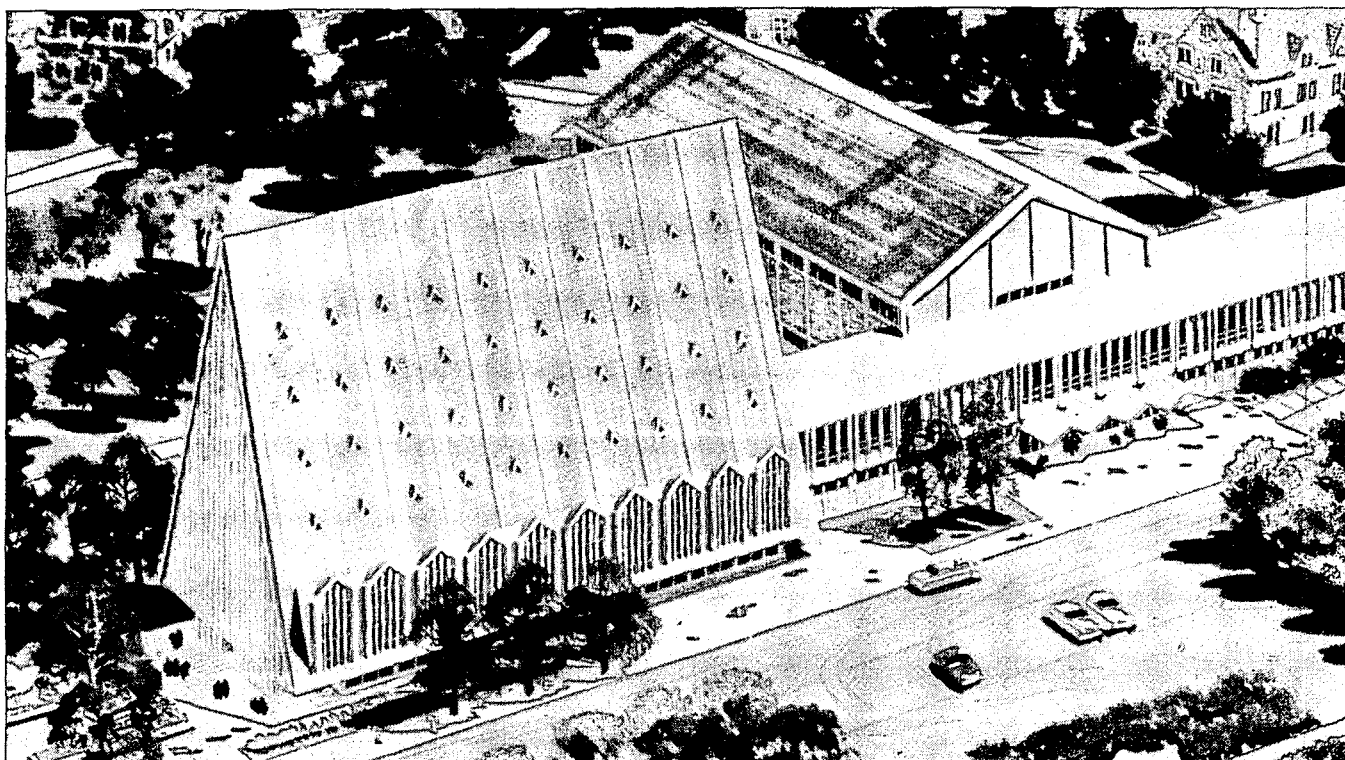
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YOUR SINGLE SOURCE OF SUPPLY FOR
CURTAIN WALLS • BUILDING PANELS • DOORS • WINDOWS

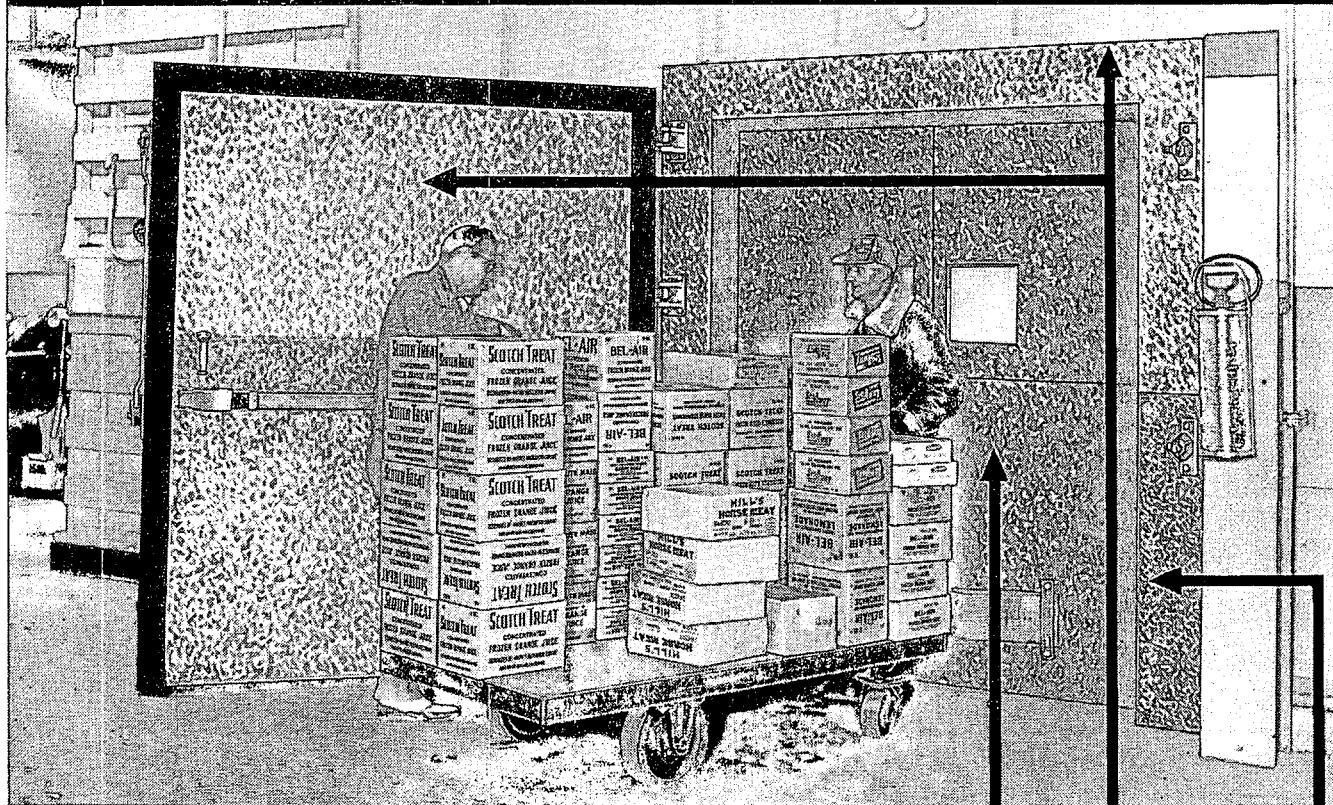
Fenestra Curtain Wall—Steel subframes with applied projected sash. Lodge Hall and Recreation Building. Masonic Homes, Elizabethtown, Pennsylvania.

Architects—Mitchell & Ritchey, Pittsburgh, Pa.

Contractor—The Pottiger Company, West Reading, Pa.



Extra protection features for Jamison super freezer doors



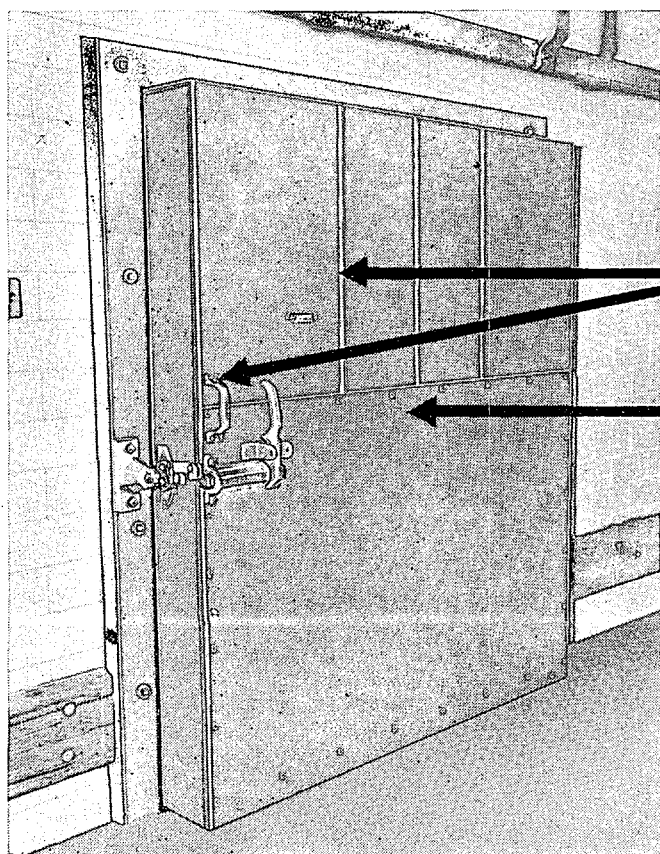
batten doors and vestibule save refrigeration

metal cladding on frame and back of door for protection from vapor and moisture

exclusive Jamison Vap-r-tyt* construction for protection against vapor penetration, has locked and soldered seams and sealed bolt holes

metal kick plate 48" high on frame and inside and outside of door for protection against bumping and abuse

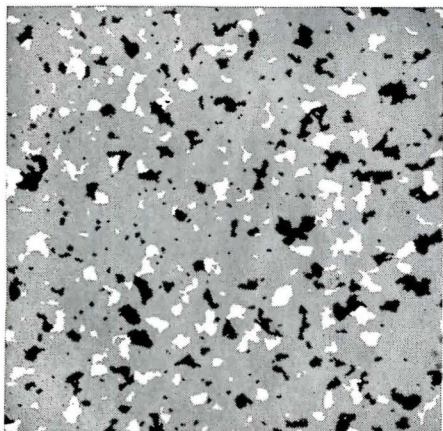
**Vap-r-tyt is a Jamison trademark*



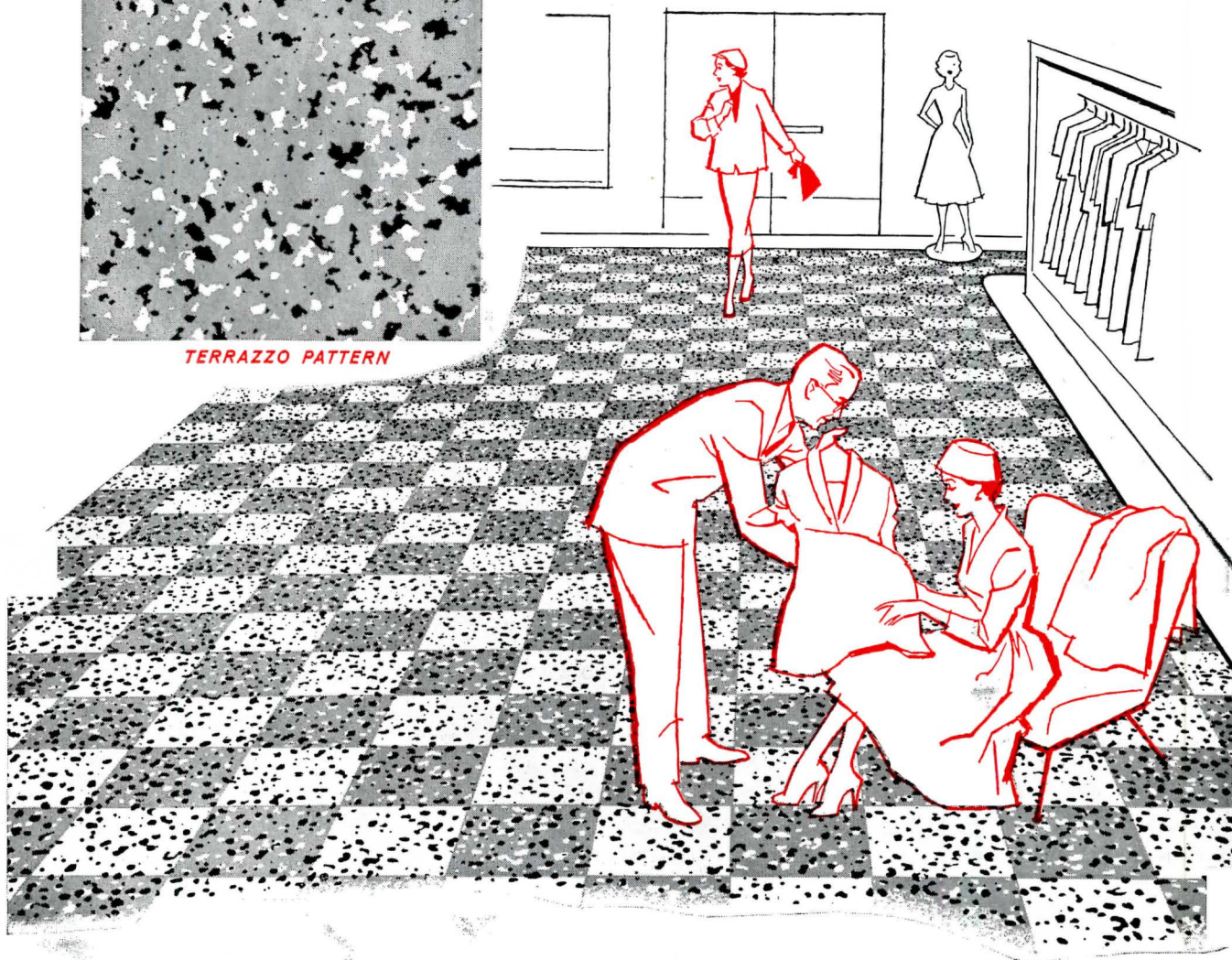
JAMISON

COLD STORAGE DOORS

HAGERSTOWN, MARYLAND, U. S. A.



TERRAZZO PATTERN



Here's Customer-inviting beauty that lasts longer with less care

Bolta-Floor's rich decorative colors and patterns help "dress-up" stores . . . make them more appealing to shoppers. Best of all heavy store traffic has little effect on Bolta-Floor. Its smooth, non-porous surface resists soil, scuffs and stains . . . keeps its lustrous "just-polished" appearance with far less care than other types of flooring. Bolta-Floor is dimensionally stable . . . won't crack, chip or shrink. Exceptional beauty and outstanding performance makes Bolta-Floor the wise choice for modern stores, buildings and institutions.

SPECIFICATIONS:

Bolta-Floor is available in 23 marbled, 24 "Terrazzo," or 5 solid colors, in standard 9" x 9", or 6" x 6", 12" x 12" and 18" x 18" tiles on special order, in .080", and 1/8" gauges. Solid or marbled are also offered in 1/2" and are produced in 27", 45" and 54" roll widths for floors, walls and countertops. See Sweet's 131/Ge.



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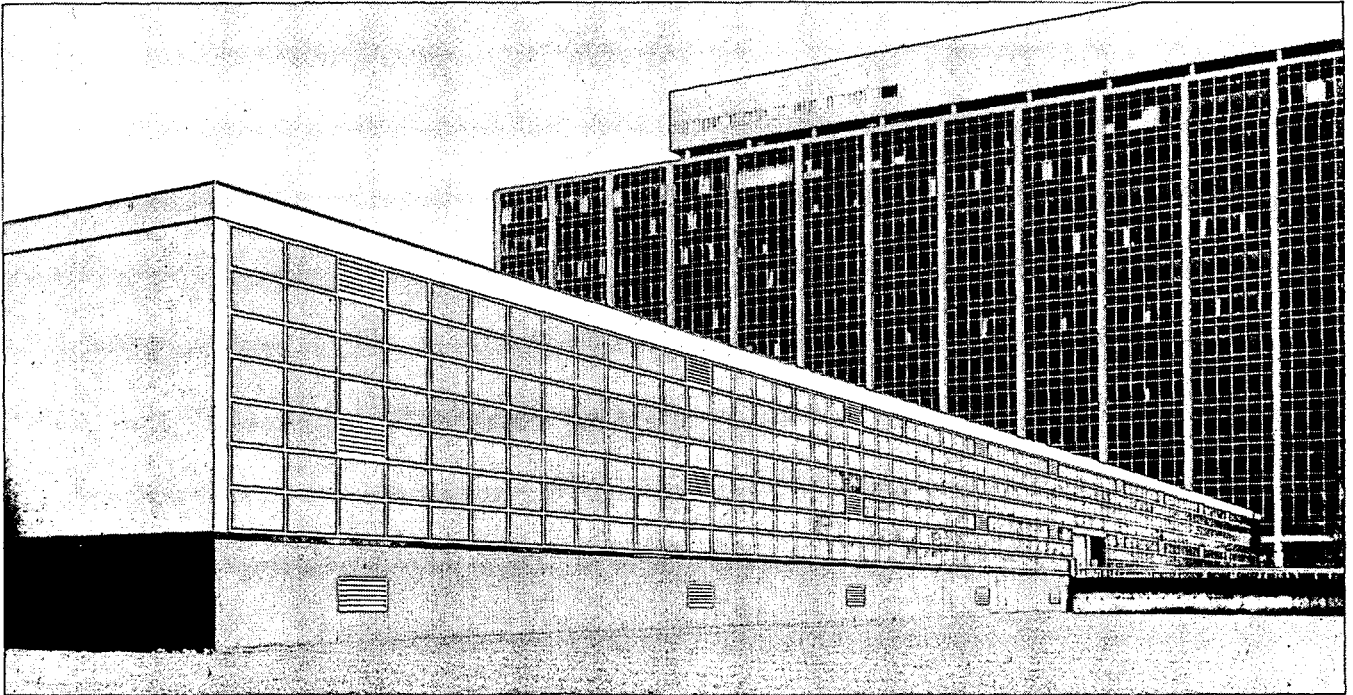


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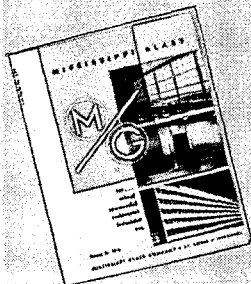
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MORE *Daylight* PER DOLLAR WITH



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Glazier: Pittsburgh Plate Glass Co., Detroit

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Dolio. Contractor: Campbell,
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Waukegan Glass Co.



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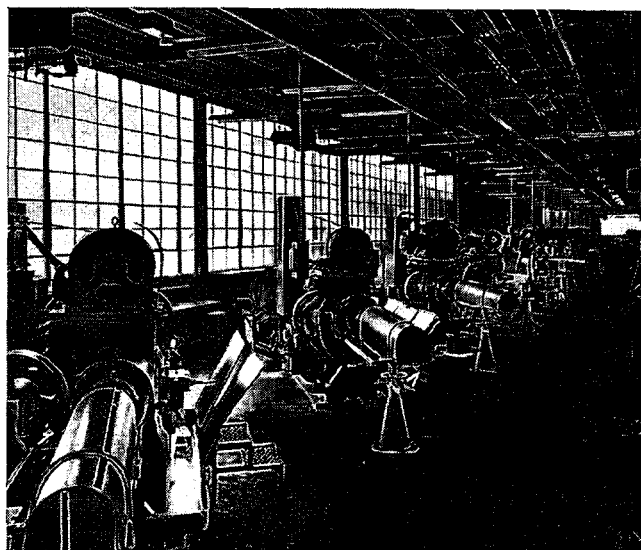
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Modern Buildings Utilize Diffusing Glass to Make the Most of Daylight

These outstanding buildings enjoy more and better daylighting per glazing dollar because translucent glass diffuses daylight deep into interiors to achieve even, comfortable, overall illumination at low cost. Areas are flooded with inexpensive, natural lighting, free of raw glare. Sharp shadows and contrasts are reduced to make seeing tasks easier. Translucent glass helps create a feeling of spaciousness and comfort. Occupants see better, feel better, work better under improved daylighting. The resulting efficiencies and improved morale make it good business to install translucent glass.

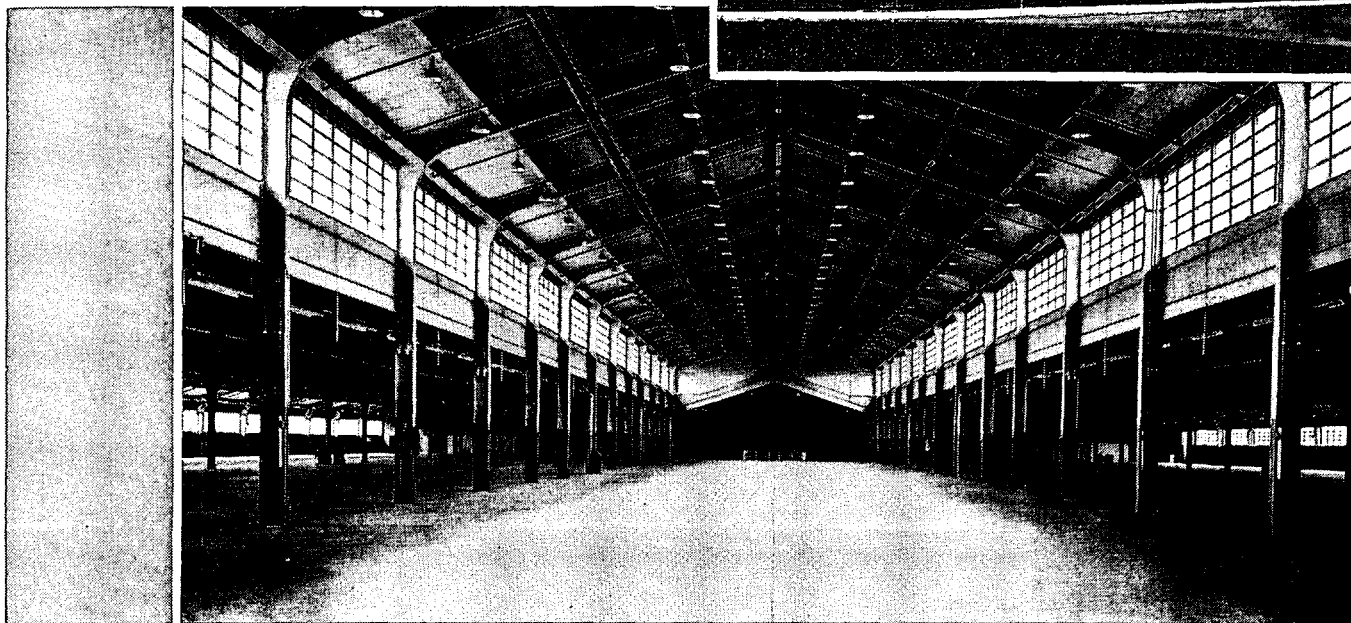
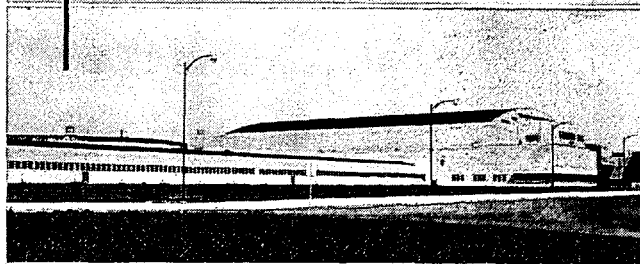
Today's leading architects are taking fullest advantage of translucent glass to achieve interesting, highly functional structures that provide high levels of low cost, natural illumination.

Specify glass by Mississippi. Available in a wide range of patterns and surface finishes to solve any daylighting requirement.



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35,000 sq. ft. of Smooth Rough glass in the Kentucky Fair and Exposition Center, Louisville, Ky., brightens entire interior. Architect: Fred Elswick and Associates of Louisville Photo by: Royal Photo Co.



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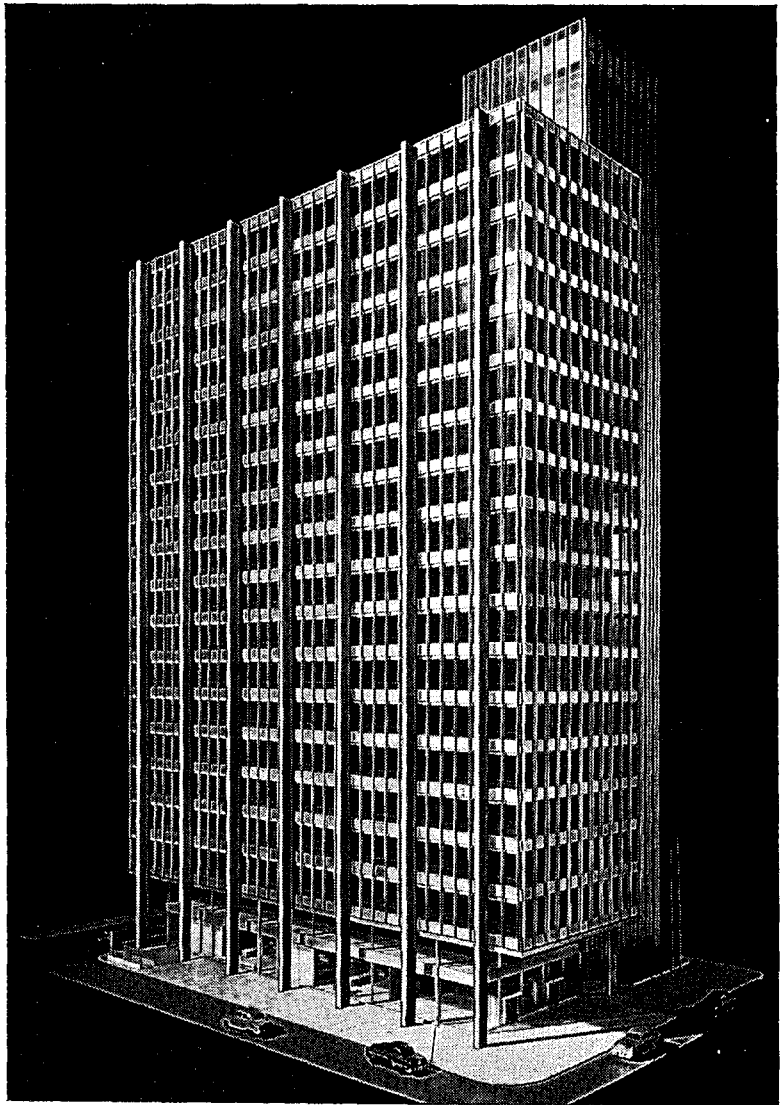


Photo • HEDRICH-BLESSING

• The new 19-story INLAND STEEL BUILDING in CHICAGO is a gleaming structure of stainless steel and green-tinted glass above a recessed ground floor—no stores or shops. It is a praiseworthy achievement in planning that provides occupants with many most-wanted features. The entire main block is supported on seven pairs of exterior columns. Each floor is a wide open area, unobstructed by pillars, and may be divided by movable steel partitions which are anchored into metal

channels in ceiling grids. An adjoining 25-story windowless steel tower houses elevators, fire stairs, washrooms and other utilities. The cellular steel flooring, topped by lightweight concrete, carries air conditioning to perimeter floor grilles and electrical service and telephone wiring to all sections of the office floor. As are thousands of other expertly planned buildings, this new pace setter is completely equipped with SLOAN *Flush VALVES*.



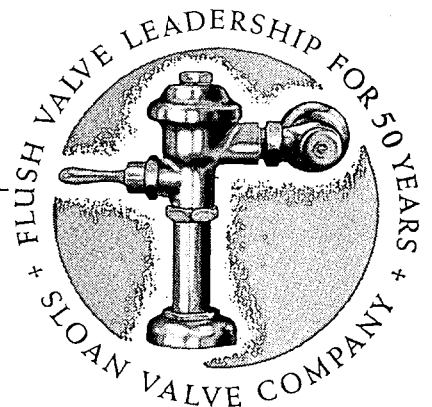
SLOAN *Flush* **VALVES**

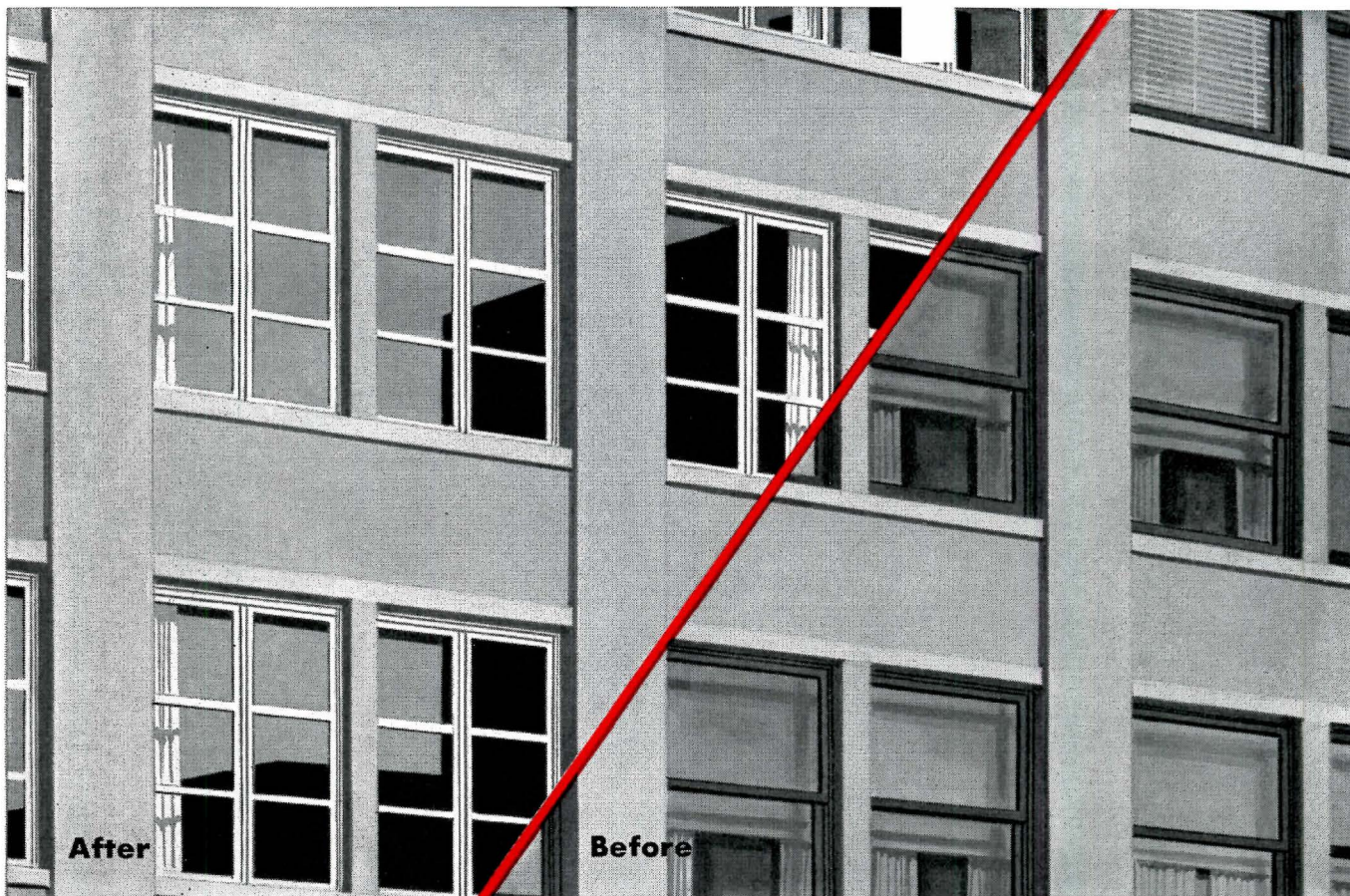
FAMOUS FOR EFFICIENCY, DURABILITY, ECONOMY

— SLOAN VALVE COMPANY • CHICAGO • ILLINOIS —

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

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An actual example of Rusco Window Modernization: a midwest department store, with 196 openings.

RUSCO Window Modernization Improves Appearance, Comfort and Maintenance In 1 to 2 Hours Per Opening

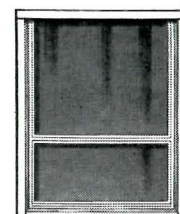
Custom-fitted Pre-assembled Windows and Frame Liners Eliminate Scaffolding, Gutting . . . entire installation is made from inside. Interior trim is undisturbed.

Tenants are happier with cleaner, more comfortable space. Rusco's "Easy-slide" feature eliminates window operation complaints. Optional insulating sash helps maintain a 15° differential in summer, draft-free comfort in winter,

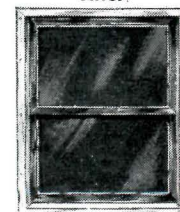
and provides draft-free ventilation.

Heating—cooling—maintenance costs go down because Rusco's felt weather-stripping stops infiltration. All glass is removable for washing inside.

There is a Rusco Replacement Window to meet your architectural requirements. Satin finish aluminum or hot-dipped galvanized steel with baked-on enamel for low maintenance and long wear.



After



Before

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Write Dept. G-2 for further Window Modernization information.

"Always one step ahead
of the weather" with

RUSCO



Also available: Architect's Steel and Aluminum Prime Window Catalogs and literature on Rusco combination windows and doors, porch enclosures, sliding glass doors, steel garage doors, electronic garage door operators.

New Horizons

...in ceiling-design ideas!

The decorative versatility of these functional ceiling materials helps make ideas "come alive."

Architects everywhere... working with expert Acousti-Celotex distributors... are creating new beauty in architecturally pleasing room and ceiling designs while solving functional problems in noise control.

Such planning freedom results from a wide range of products and installation systems. Acousti-Celotex products integrate with heating and air conditioning equipment, Celotex Acousti-Lux translucent panels or other lighting systems... enhance any design motif.

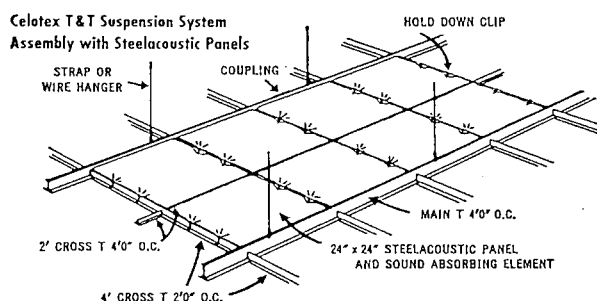
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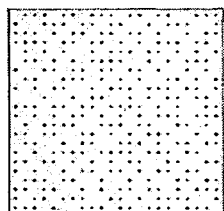
Directors' Room, Bank of Texas, Houston showing ceiling of Acousti-Celotex Cavity Tile on a T & T® Suspension System.

Architects: Duryea & Elkins—John A. Greeson Associated Architects.

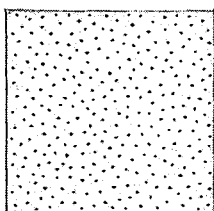
Acousti-Celotex Contractor: Straus-Frank Co., Houston.



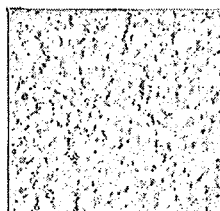
SPECIFICATIONS: Write for portfolio of specifications, including detail drawings, covering this and other ceiling assemblies and Acousti-Celotex applications.



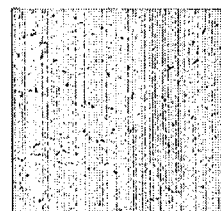
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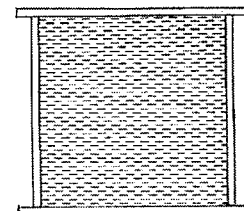
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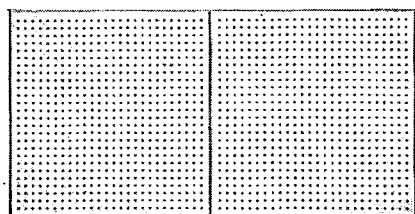
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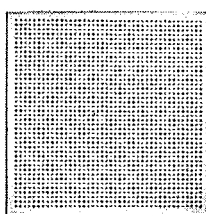
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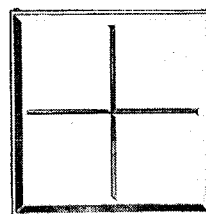
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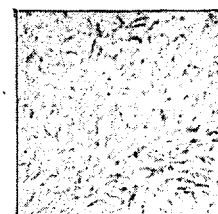
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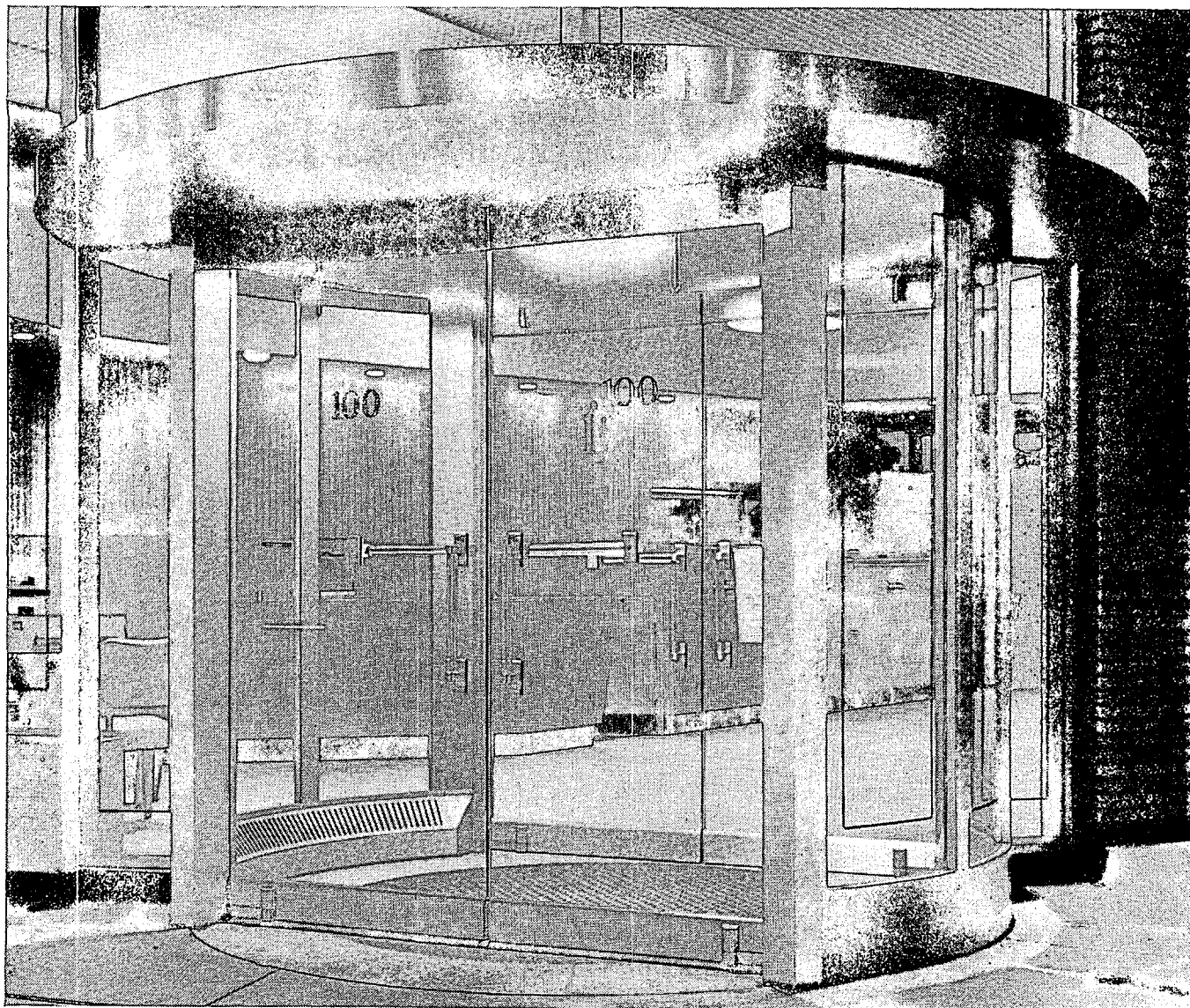
Sound Conditioning Products to Meet Every Sound Conditioning Problem... Every Building Code—

The Celotex Corporation, 120 S. La Salle St., Chicago 3, Ill.

• In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec

A black and white advertisement for Celotex. The background shows a room with walls covered in a busy, repeating pattern of small, dark, stylized figures or shapes. A large, dark, leafy plant is positioned on the right side. In the lower center, a simple wooden chair is visible. The word "CELOTEX" is printed in large, bold, outlined capital letters across the middle of the image, with a horizontal line underneath it.

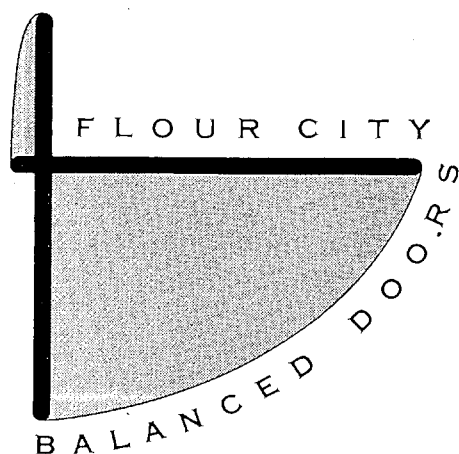
CELOTEX



FIRST NATIONAL AUTO BANK
SAINT PAUL, MINNESOTA

ARCHITECTS:
BETTENBURG, TOWNSEND, STOLTE
AND COMB

GENERAL CONTRACTOR:
STEENBURG CONSTRUCTION COMPANY



Flour City Balanced Doors of aluminum and tempered glass are a prominent feature of this sparkling aluminum entrance—also by Flour City

THE FLOUR CITY ORNAMENTAL IRON COMPANY

2637 27TH AVENUE SOUTH • MINNEAPOLIS 6, MINNESOTA

1893 SIXTY-FIFTH ANNIVERSARY 1958





ONONDAGA COUNTY
OFFICE BLDG.

ARCHITECTS
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ELECTRICAL
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FOR DEPENDABILITY BEYOND A DOUBT

ALWAYS SPECIFY **P&S**

In the modern new Onondaga County Office Building in Syracuse, New York—as in more and more buildings across the country—planners used the complete line of Pass & Seymour wiring devices for super-tested, thoroughly proved trouble-free performance.

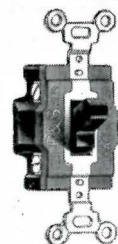
The famous precision-engineered P&S 20-AC1 Switch was among the devices chosen. It operates quietly, yet electrical contact is firm and positive. Can be used at **full-rated capacity** on fluorescent and tungsten filament lamp loads. Features positive kickoff, back or side wiring terminals, oversize long-life silver alloy contacts.

The P&S 1530 Duplex Outlet was picked for its long heavy-duty life. Rated at 15

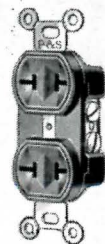
Amperes, 125 Volts, it features precision-formed double grip contacts, T-slots and washer ears. Strap is enclosed and completely insulated for extra protection.

Intensive research, expert engineering and more than 67 years of specialized experience are behind every Pass & Seymour device. Their long-life, low maintenance reliability will add to your reputation.

For information on any of the long line of dependable P&S devices, write Dept. PA-258.



20AC-1



1530 OUTLET

P&S

PASS & SEYMOUR, INC.

SYRACUSE 9, NEW YORK

60 E. 42nd St., New York 17, N. Y. 1440 N. Pulaski Rd., Chicago 51, Ill.

In Canada: Renfrew Electric Limited, Renfrew, Ontario

MAKE THE COMPLETE JOB COMPLETELY P&S

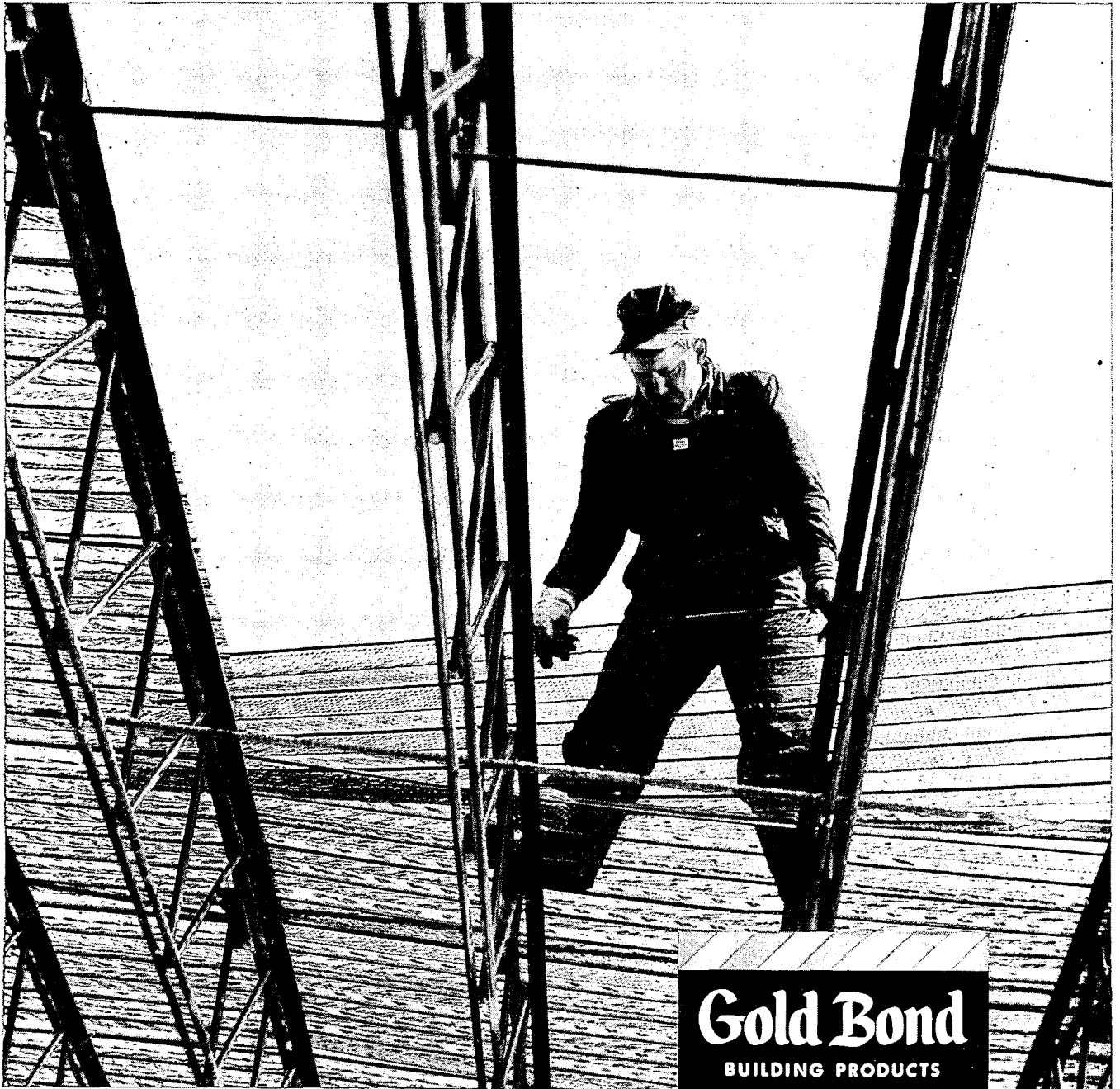
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You combine a rigid pouring form with excellent slab reinforcement when you specify Gold Bond $\frac{3}{8}$ " Rib Lath for centering in poured concrete roof and floor slabs.

Gold Bond® $\frac{3}{8}$ " Rib Lath offers exceptional reinforcing for concrete because it is mechanically bonded to the very bottom of the slab — the place where tension stresses are greatest. And there's no need for stretching or for erecting costly temporary bracing — the lath is simply laid across the joists and easily clipped in place.

For complete technical data, write Dept. PA-28, National Gypsum Company, Buffalo 2, New York.

RIGID REINFORCEMENT



Gold Bond
BUILDING PRODUCTS

NATIONAL GYPSUM COMPANY

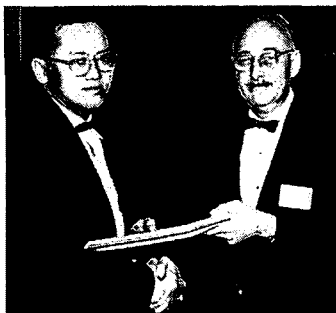


Photos: Stanlee Photo Service

PHILADELPHIA HOST TO P/A AWARDS DINNER

Obata

Creighton



Corlett

Hunt



Mrs. Hunt



Saunders

Qualls

Mrs. Nowicki

Kamphoefner

Geddes

Winners in P/A's Fifth Annual Design Awards Program gathered from all parts of the country on January 10 and 11 to receive and discuss their Awards and Citations at a two-day meeting in Philadelphia, Pennsylvania. On the evening of the first day a reception and banquet were held at the Bellevue-Stratford Hotel, co-sponsored by the Philadelphia Chapter, AIA, and on the second day a Seminar discussion of the five Award-winning projects took place at the University of Pennsylvania, co-sponsored by the Department of Architecture of that institution.

P/A's Design Awards Program (the results of which, for 1958, were reported in full in last month's issue) is conducted

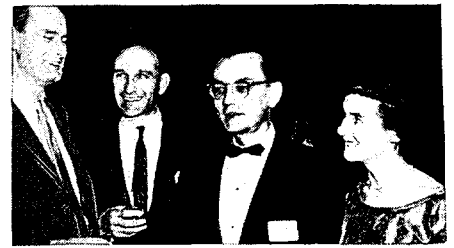


Hagenbuch Nims Browne Mrs. Creighton Wilkin

Harrover



Mann



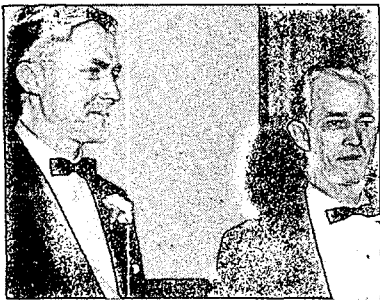
Boutmy

Guest

Mr. & Mrs. Tarapata

Johnson

Lothrop



Piclens

Maki

Davis

Saunders



DeMars

Hardison



Mr. & Mrs. Aydelott



Koch

Pei

yearly to honor work in the design stage, with its stated purpose to "give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored." The presentation dinner, customarily held in the home town of the winner of the First Design Award, this year paid tribute to the firm of Robert Geddes, Melvin Brecher, and George Qualls for their top-Award-winning housing project, and also called attention to the two Citations won by the Philadelphia firm of Vincent G. Kling and his Associates, and pointed up the fact that Philadelphia has had many winners in past Design Award Programs as well. The Philadelphia Chapter, AIA, was a most warm host to the assembled group. Not only did Chapter President John Carver, Program Chairman Harry Kale, and others help plan and conduct the banquet; the Chapter feted the visiting architects again with a cocktail party after the Seminars.

The roster of guests included not only almost all of the Award and Citation winners (many, photographed during the reception, shown on these pages) and four of the Jurors

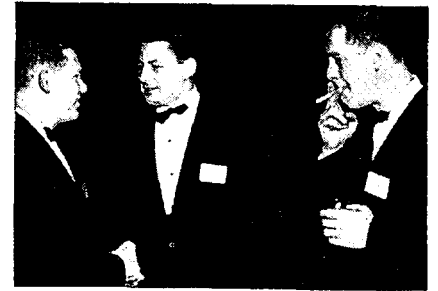
(Arthur Davis, Carl Koch, I. M. Pei, Dean Henry Kamp-hoefner) but also many local civic leaders, including William Rafsky, the Mayor's Development Co-ordinator, and a number of clients of premiated projects, such as the City Manager and Vice-Mayor of Norfolk, Va. (for Vincent Kling's and Oliver & Smith's Civic Center), Dr. Carroll Johnson, Superintendent of Schools of White Plains, N.Y. (Perkins & Wills' client) and, among others, members of the Delaware County Housing Authority who commissioned the top-winning project.

On the second day an articulate, analytically critical group of architects went over in detail the five Award-winning projects. These discussions, tape recorded, will be published in P/A during the year: the presentations by the originating designers, the critiques by Jury members and University of Pennsylvania faculty (Dean Holmes Perkins himself taking one), and discussion from the floor. Basic problems in architecture—scale, unity, structural expression, social application, and others—came into the analysis, always (the great distinction of these Seminars) in relation to specific, work-in-progress projects.

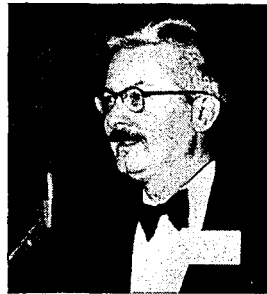
Sanderson Ketchum Mrs. Reese



Unger Gina Landy



Brecher Davis Wisniewski



Kamphoefner



Mr. & Mrs. Biggs

Holmes



Perkins Mrs. Koch Mrs. Perkins



*Kling Vice-Mayor Abbott
City Manager Maxwell*

As in past years the group broke up reluctantly, and only after further hospitality in several local architects' homes. The combination of good fun and serious purpose among those who gather for these annual affairs has quite apparently established a tradition of unusual, high-level conviviality unique among architectural gatherings.

At the dinner, after the projects had been shown in slides and the presentations had been made, the Jury Chairman, Henry Kamphoefner, Dean of the School of Design, North Carolina State College, spoke to the gathering in words of congratulation—but distinct warning—that drew serious applause. Pointing out that the Jury members found much work of high quality, which made them happy with the results, Kamphoefner warned of two things: "First is the rather shocking amount of mediocre work from so many offices, including some of the first-rate firms; second is the tendency . . . to permit single forces to dominate design. . . .

"I think we all sadly realize," he said, "that the architect was not a respected professional man in American society in the early part of the 20th Century . . . in the Beaux Arts system as practiced by the leading schools of architecture

25 years ago, the emphasis was on a shallow esthetic based on form, and that effort was further strangled by a desire to win the competition. . . ."

Pointing out that "architecture (with architectural teaching) has made giant steps in the middle of the 20th Century," the Dean emphasized that nevertheless "the position of architecture in society is in jeopardy if the great body of our profession accepts the thesis that solutions to architectural problems can be found by concentration around a single idea."

Kamphoefner concluded: "To be led to believe that great architecture is based on a single element or design alone, such as structure, or . . . any other dominant factor of design to the exclusion of other considerations . . . is going to force the public to look at us with distaste and a jaundiced eye. . . . We need to broaden the base of our efforts. . . . As we encourage adventure, experiment, research, and creativity in architecture, we must not lose sight of the essential character of our obligation—the total solution of the whole complexity of problems that face us in contemporary society."

/a news bulletins

- Determined campaign of alert preservationists against mandatory demolition of historic East Front of Capitol in Washington, in course of impending alterations to that landmark, has gained fresh impetus from new bills introduced in both Senate and House and referred to Public Works subcommittees. Architects in charge now would be permitted to preserve the facade created by Thornton, Latrobe, and Bulfinch. Now is the time for interested persons to rush appeals to their Senators, Representatives, and the subcommittee chairmen: Sen. Pat McNamara of Michigan and Rep. Robert Jones of Alabama.

- American Registered Architects, Inc., founded two years ago by a group of Georgia architects headed by Wilfred J. Gregson, Atlanta, now is conducting a national membership drive hoping to enroll all registered architects and establish a Regional Director for every State.

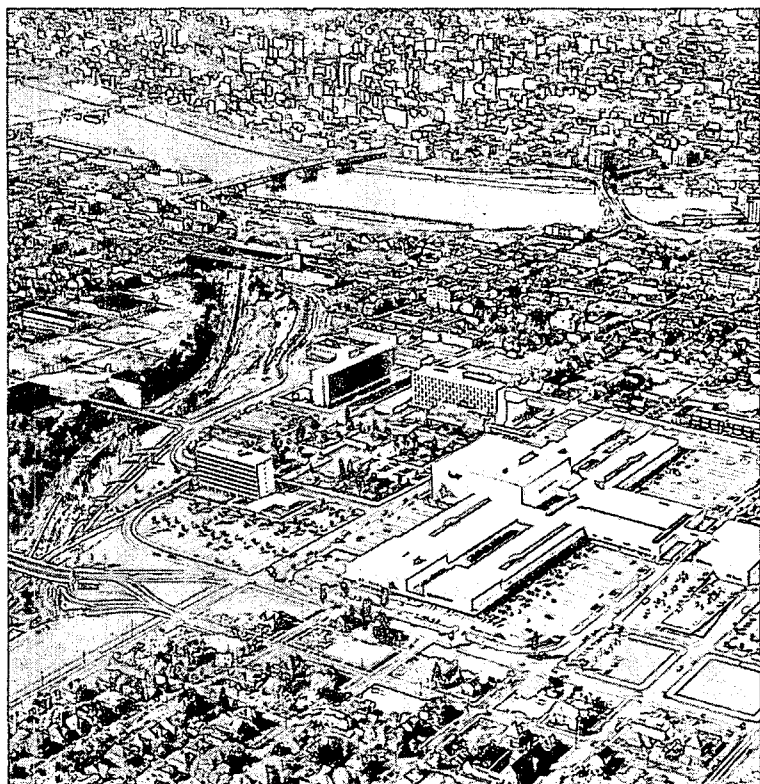
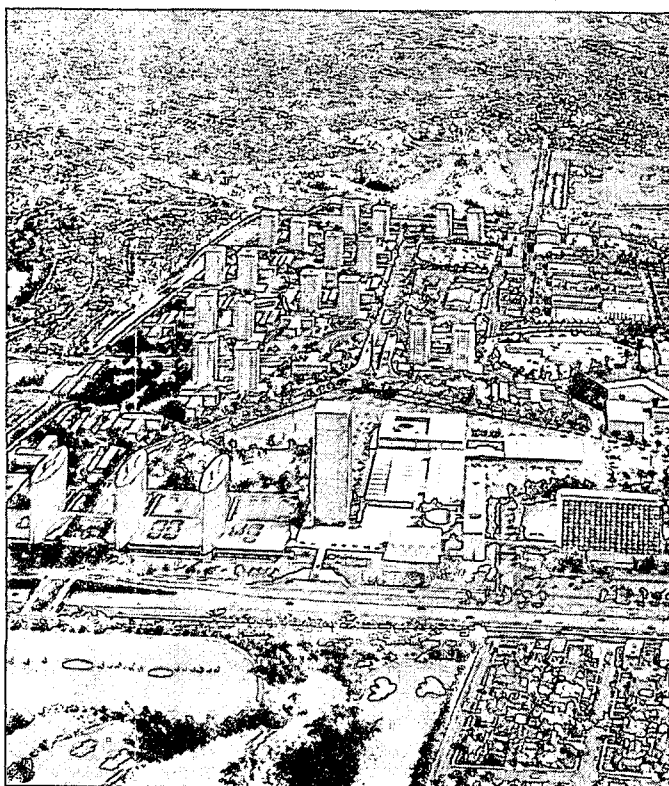
- Recently announced by Spyros P. Skouras, President of 20th Century-Fox Film Corporation, are master plans for "Century City" (below), 176-acre redevelopment program in Los Angeles. The project—involving tall office buildings, multistory apartment buildings, garden apartment, shopping center, 1000-room hotel, restaurants, and parks—is to be built on a portion of the film company's 284-acre property, immediately west of Beverly Hills, between Santa Monica and Pico Boulevards. In addition, there will be a film-industry center, including an office building, exhibit hall, motion-picture museum, and multipurpose auditorium. Architects and land planners for gigantic, \$400 million

development are Welton Becket & Associates (see also FINANCIAL NEWS). On remainder of land, 20th Century-Fox will construct new sound stages and offices. Interestingly, first unit scheduled for construction in Century City will be world headquarters for the Becket office. Don Becket is Project Architect; planning is by William Brownyard and James Pulliam.

- John Knox Shear, Architect, Educator, Author, and Editor of Architectural Record died Jan. 10 at Princeton, N. J. after a brief illness. He received architectural degrees from Carnegie Institute of Technology and Princeton University, and prior to joining Record in 1955, was head of Department of Architecture, Carnegie Tech., also practicing architecture in Pittsburgh.

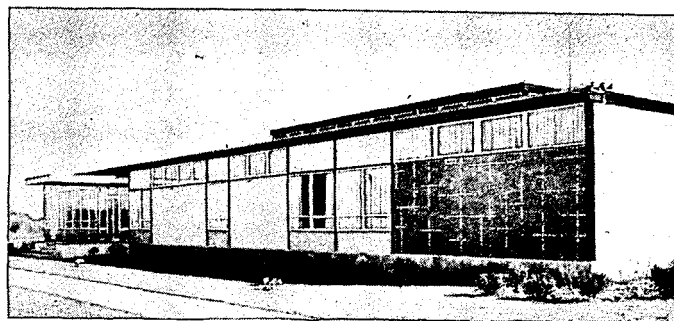
- Notice has been received of the death during December of Frederick Law Olmstead, noted Landscape Architect, in Malibu, Calif.; of Walter P. McQuade, former Chief Architect for Port of New York Authority and former Editor of The Architect, in New York; of Arthur D. McVoy, Architect-Planner, in Baltimore; and of Prof. Hans Hofmann, in Zurich, Switzerland.

- Plans for a vast urban, rather than suburban, shopping center have recently been completed by John Graham & Company, Architects-Engineers, of Seattle and New York. Lloyd Center (below) is to be built in "T" form with more than 100 stores on either side of two shopping malls. Major drawing points—department stores, super-markets, junior department stores, and high-fashion stores—are to be at extremities of each mall. Three parking and shopping levels are to be interconnected by 36 escalators. Undercover parking has been provided for 8500 cars; service and deliveries to stores will be from underground or roof tops.

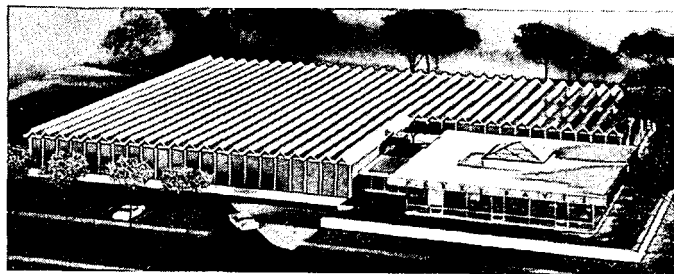


John Graham & Company

- Research Center for Tile Council of America, Inc., has recently been completed on site near Princeton, N. J. Designed by O. Kline Fulmer, Architect, building was planned for research operations of 26 members of Council. In designing the structure, Fulmer used ceramic to its fullest extent. Exterior panels (right) of brilliant red, blue, yellow, mellow taupe have pattern of small white units to establish rectilinear appearance of tile. Interior design utilizes ceramic mosaics, quarry tile, ceramic tile patterns. Woods were selected to complement tile applications.



- Following trend of establishing branch offices, Parke-Davis has announced construction plans for 1958 completion of new structure at Skokie, Ill. Designed by Yamasaki, Leinweber & Associates, Birmingham, Mich. Architects, one-story office and warehouse (right) will feature reinforced concrete roof, brick walls, large expanse of glass. Office area will be 6000 sq. ft.; warehouse space, 40,000 sq. ft. Building to cost \$500,000 will be set on 3-acre site.



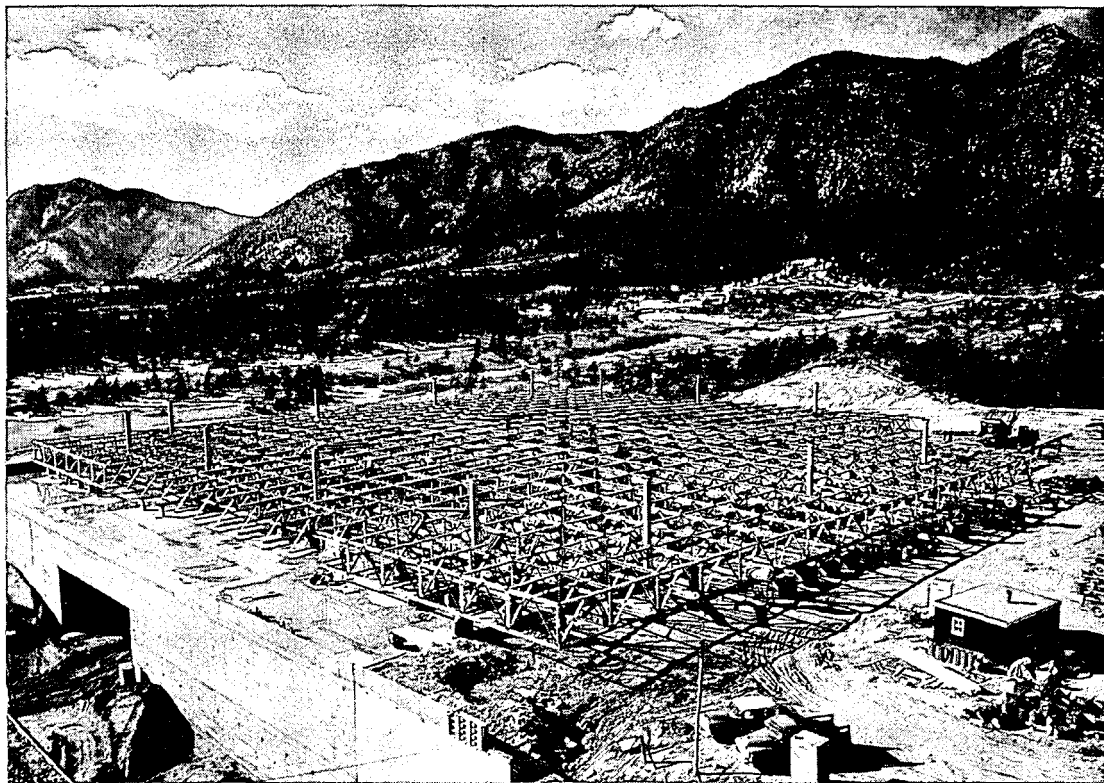
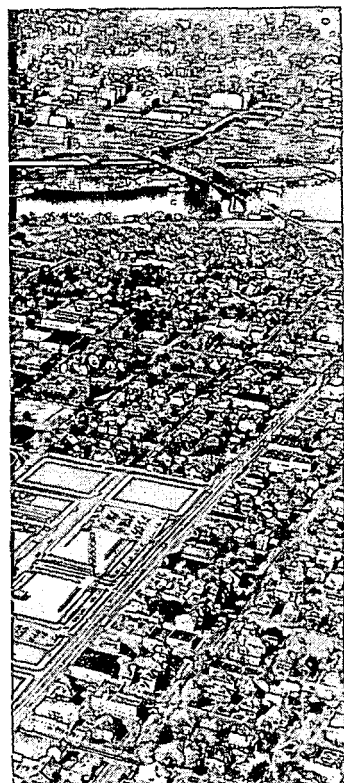
- Joseph Young, muralist, and author of "Course In Making Mosaics" (Reinhold, 1957) will teach at Positano (Italy) Art Workshop and Institute of Industrial Design (Haifa, Israel) this summer, and will conduct "Italian Mosaic Tour" in June.

- Two winners of 7th annual \$5000 Frederik Lunning Prize for talented young craftsmen in field of industry arts and crafts are Erik Hoglund, Sweden, and Hermann Bongard, Norway.

- 1958 LeBrun Fellowship Prize Competition is now open to architects from 23-30 years old. Prize of \$3000 for travel abroad will be awarded for best design of a Memorial Exhibition Building in environs of an open square in city of approximately 100,000 population. Program may be ob-

tained from LeBrun Fellowship Committee, New York Chapter, American Institute of Architects, 115 E. 40 St., New York 16, N. Y.

- Most interesting roof raising in recent years took place Jan. 3 when 1150-ton steel-grid roof of cadet dining hall (below) at new Air Force Academy was put in position. Roof was raised by lift-slab methods onto supporting 16 "X" steel columns. First raised to one-in. above columns, temporary timbers supported roof while final welding was accomplished. Stainless-steel ball-and-socket joints top each column, to allow roof movement. During erection by American Bridge Division of U. S. Steel Corp., hydraulic jacks placed on top of columns turned nuts which drew up bolts attached to roof beams. Operation took about six hours.



by William Hurd Hillyer



Robert Louis Stevenson, in one of his less-known stories, told about the ups and downs of "a leather business." At the end of a fiscal year, its owners embarked upon a carefully charted policy of expansion. All they succeeded in expanding were the liabilities. A

twelve-month later, endeavoring to profit by experience, they decided upon a drastic plan of contraction. But all they contracted were the profits. In similar ironic vein was the 19th Century narrative of the credulous householder who wagered with a couple of traveling swindlers that he could announce for five minutes every swing of his clock's pendulum. He sat wagging his finger and repeating, "Here she goes—there she goes!" while the miscreants sneaked off with his money. We are reminded of these anecdotes by official and quasi-expert efforts to resolve today's conflicting economic trends: expansion-contraction, here and there, while inflation and deflation successively deplete the nation's savings.

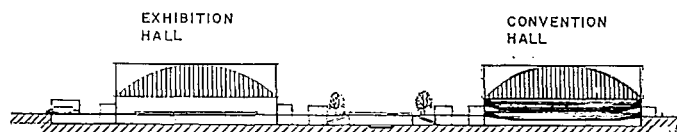
• Municipal bonds continue their upward path. This speaks well for 1958's city and county building outlook. As an

example featuring a thinly populated region in the smaller brackets: Clark County, Nevada, last month floated a courthouse bond issue on as low an income basis as 2¾% to 4½%. Four new issues totaling some \$250 millions were floated around New Year's, as listed in the Bond Buyer's Major Accounts. Bond Buyer Average income-yield basis was down to 2.85% for 20 typical bonds.

Evidence of the up-climb in personal savings—much of it finding its way into mortgages—is furnished by the announcement of a \$1.35-billion net increase of mutual-savings-bank deposits during 1957. Total deposits made for that year reached a record high of \$21.7 billions. These banks, says the executive vice-president of their national association, now hold a larger percentage of their assets in mortgages than at any time since 1930. Savings deposits remaining in banks of every sort totaled \$87.5 billions at '57 year-end, a net rise of \$7 billions or 9%, as compared with \$4 billions or 5% in 1956.

• Perhaps the most notable of current efforts to encourage expansion is put forth by FHA as a tonic for residential sales. Under the new rules, buyers are granted more mortgage money in proportion to their income than under last year's procedure. Belief is expressed by FHA Commissioner Norman Mason that more families than formerly can meet payments for housing expenses. A \$550-a-month family can afford, officials think, to spend about \$143 a month for housing compared with \$132 in the past; and a \$650 family can shoulder around \$163 as against a former \$141. Such

CONVENTION CENTER PROPOSED FOR SOUTH OF THE LOOP



In an effort to stop proposed development of a convention and exhibition center on Chicago's lake-front park at 23 Street, a team of architects and planners have submitted an alternate proposal which would save the park, clear a slum, fortify the central city, and keep Chicago from costly traffic problems. The new site at State and Congress has these advantages: 5000 hotel rooms within walking distance; shops, recreation, and restaurants nearby; existing subway, bus, and elevated transportation; parking for 2800 cars; present and planned expressways adequate for convention traffic. The area could be purchased, cleared, and sold to the exposition authority under the federal slum clearance program. The center (main floor right) would provide 350,000 sq ft of exhibit space, seating for 20,000 spectators, an outdoor exhibition plaza (sketches acrosspage), a hotel, and an administration building. The scheme also includes the allocation of funds to restore the Auditorium Theater. Authors of the plan are: Harry Weese, Bruce Adams, Robert Genchek, Piero Bigongiari, Ezra Gordon, John Cordwell, Harvey Hoshour, William Roehl, Benjamin Weese, Pat Spillman.

families, who have been lucky enough to keep their jobs in the midst of the current firing wave, should find shelter-encouragement under the new ruling. Meanwhile, builders and realty men note an improvement in the January residential market.

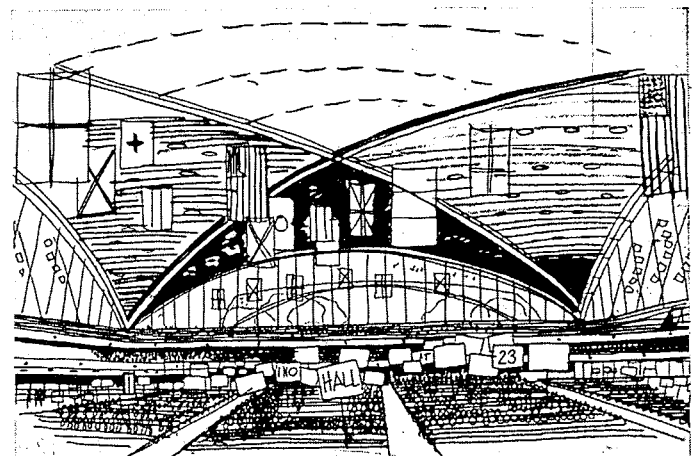
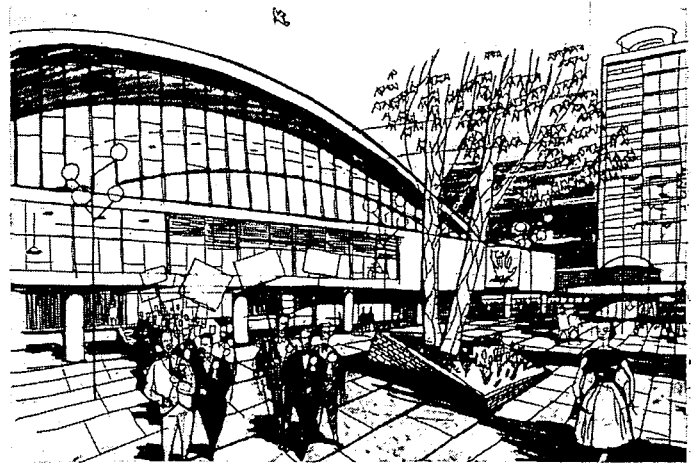
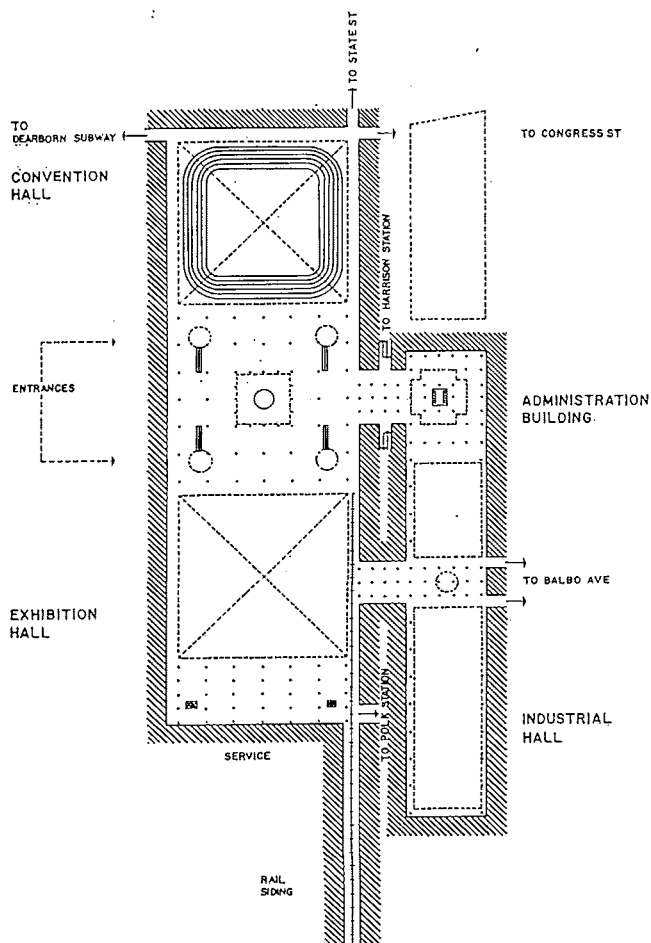
The phrase "pump-priming"—20 years moribund—has been dusted off to describe the \$177-millions additional boost authorized at the turn of the year for mortgages on "armed-service-family housing." Reckless nonprofessional building will, it is hoped, enter into the picture less than formerly, since the recent severe lessons in such wildcat practices.

- Shift from transitory to permanent assets is exemplified by the decision of Twentieth Century Fox to erect a planned city in the Los Angeles area on all but 79 of the 284 acres now used by that concern as a movie production lot. Improvements will include four office buildings, a 1000-room hotel, a large auditorium, a shopping center and 3 million sq ft of apartment-building space for a 15,000 population. An insurance company will provide the greater part of the \$25-millions cost. The durable dwellings and commercial structures which will arise in place of plaster sets may be symptomatic of a major evolution. The change began a very few years ago with the decline of shoddily depreciating construction in favor of highly durable combinations of concrete, glass, and metals. In step with such a development is the substitution of long-term amortized mortgages for short-lived obligations that face hazards of renewal every half decade. Financing as well as construction is becoming

more and more durable. (See also NEWS BULLETINS.)

- A second financial system, rivaling in magnitude the combined asset structure of all banks, is revealed through a report released in mid-January by the National Bureau of Economic Research. Prepared under the egis of Princeton University and entitled, Federal Lending and Loan Insurance, the report is the first document to collate all such activities into aggregate figures. Lending and loan insurance by Federal and Federally sponsored agencies is shown to have reached a total of \$138 billions in the decade just ended. The authors of the report conclude that Federal housing-credit aids have promoted a decrease in the average size of homes and in the number of rooms per dwelling.

- Have the suburbs developed too far and too fast? Has this development been at the expense of the urban areas? Will the next tide flow back into the cities? These questions are posed by a long established New England real estate authority, which urges "wise and integrated planning" in answer to the first query, and says "yes" in reply to the second. The cities, we are reminded, offer much that the suburbs cannot give and their waking up to this fact may result in a reversal of tendency. Respecting the cities, we may add that in times past—as in the 30's—an economic downslide has been checked not by suburban but by urban development. At this moment, we see great present and prospective activity in office-building construction, with consequent brightening of outlook for basic materials and industries.



Washington repo

by Frederick Gutheim



The critical vocabulary is lacking to describe the showy monument to Simon Bolivar designed by Sculptor Felix de Weldon installed here last month according to plans by Luis Malausena of Caracas; Favrot, Reed, Mathes & Bergman, of New Orleans; and Faulkner, Kingsbury & Stenhouse, of Washington. (I should add that the project is under the direction of the Venezuelan Ministry of Public Works.) Standing in a small triangle of land between Paul Cret's two buildings of Pan American Union, immediately south of Waddy Wood's Interior Building, the heroic equestrian statue is set in elegant surroundings of marble paving, formal pools, and lavish planting. One can easily imagine the Fine Arts Commission, whose offices adjoin the monument, gleefully greeting this revival of uninhibited high design. The government of the Venezuelan dictatorship, which has recently weathered one revolt and still appears wobbly and woozy, has certainly pulled out all the stops. Weldon, whose flamboyant and super-heroic two Jima monument here can only be compared to modern Soviet military sculpture (as in the East Berlin cemetery), is perfectly in command of the situation. Another work of undoubted popularity has been born. I confess, however, to a greater interest in this project as an example of the intensively designed and richly developed urban park, of which the garden of the Museum of Modern Art, Pittsburgh's Mellon Square, and the Rawlins Park on the north side of the Interior Building here are examples. There is a real need for such "parkitecture," and we should be glad to have it at all instead of receiving it too critically.

A considerable volume of architecturally interesting work has been currently exhibited by National Park Service. Most of it is embraced in the "Mission 66" program, designed to prepare the parks for an estimated 80,000,000 attendance in 1966. The typical national park requires roads, bridges, and parking lots to make it accessible. The key building is generally a visitors' center, where some form of orientation is provided, as well as lavatories, lounges, and other reception facilities. In more elaborate installations, museums will be included. Offices, staff residences, facilities for educational talks (both indoor and outdoors), and a variety of utilities and service buildings are other parts of the equipment of a typical large park. The trend in park architecture seems to be away from the log-cabin type of structure that was supposed to blend with the background into invisibility, and toward a more positive type of design that achieves its effect by contrast. I was especially impressed with the new buildings going up or proposed for Grand Teton, Yosemite, and Dinosaur parks. The San Francisco firm of Spencer & Ambrose has done an outstanding visitors' center at Grand Teton and an excellent lodge at Yosemite. Both seem to have

met the demands of large occasional crowds without creating facilities that are startlingly empty the rest of the time. Anshen & Allen designed the visitors' center in Dinosaur National Monument, one of their boldly aggressive structures. Yellowstone has a very good motel, designed by Welton Becket & Associates, and a visitors' center by Hurt-Trimbell-Caprat. Another San Francisco firm, Malone & Hooper, designed at Grand Teton one of the most satisfying buildings in the program. A couple of years back P/A gave one of its Design Award citations to the visitors' center at Coquina Beach, and the color photographs of this structure confirm the earlier expectations of a first-rate job. Everglades National Park contains an array of residences, utility buildings, and other structures by Park Service Architects John N. Cabot and Donald F. Benson that set a high standard for such buildings. Other notable work at Mount Rushmore National Memorial, Great Smoky Mountains National Park, and elsewhere was noted.

- The foggy future faced by General Services Administration's "lease purchase" construction program has cleared a little with the brisk response to the elimination of its 4% interest ceiling. Bids ranging from 4.74% to 5% for long-term investment have been received. Pending analysis of the bids on 10 projects, 90 others in the stalled program may be released for bid. The big question is still Congressional attitude on the program, whose principal attraction is that of any installment buying scheme—the low down payment.

- With the actual removal of Atomic Energy Commission to its new headquarters 20 miles northwest of Washington, questions concerning the ability of its employees to deal with extraordinary transportation and housing problems should be resolved. The National Security Agency's earlier move did not involve such a drastic distance, and other Federal agencies whose problems will be similar to AEC's are watching this with interest. So far, most of the AEC people have elected to try car pools as their way out, but a substantial number is cautiously exploring the possibilities of building in the area. A subsidized bus system seems to be meeting the immediate need, but titanic commuting is the alternative to AEC's determination not to get into another "company town" operation like Oak Ridge, and any more comprehensive approach to the housing question that would involve a new town has been firmly rejected.

- Further development of Gallaudet College, Washington's unique higher education institution for deaf mutes, includes a classroom and laboratory building designed by William N. Denton, Jr., and a banjo-shaped building containing classrooms and offices by the architectural firm of McLeod & Ferrara. The institution, just a hundred years old, is named for Dr. Thomas Hopkins Gallaudet, pioneer teacher of the deaf, whose son was its first superintendent.

- As generally predicted, the Administration's first direct step to counter the economic slump was to liberalize housing credits. Military housing, co-operative housing, and slum clearance were the beneficiaries of the Presidential order. Biggest and most immediately effective was the authorization to the Federal National Mortgage Association to buy mortgages on 11 military-housing projects.



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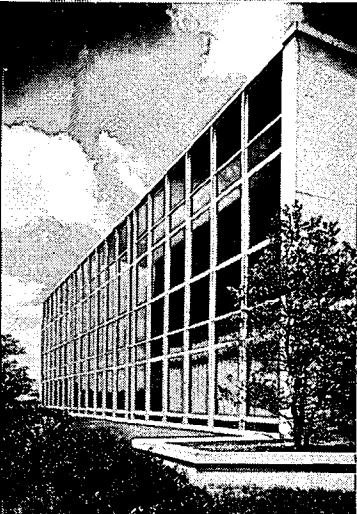
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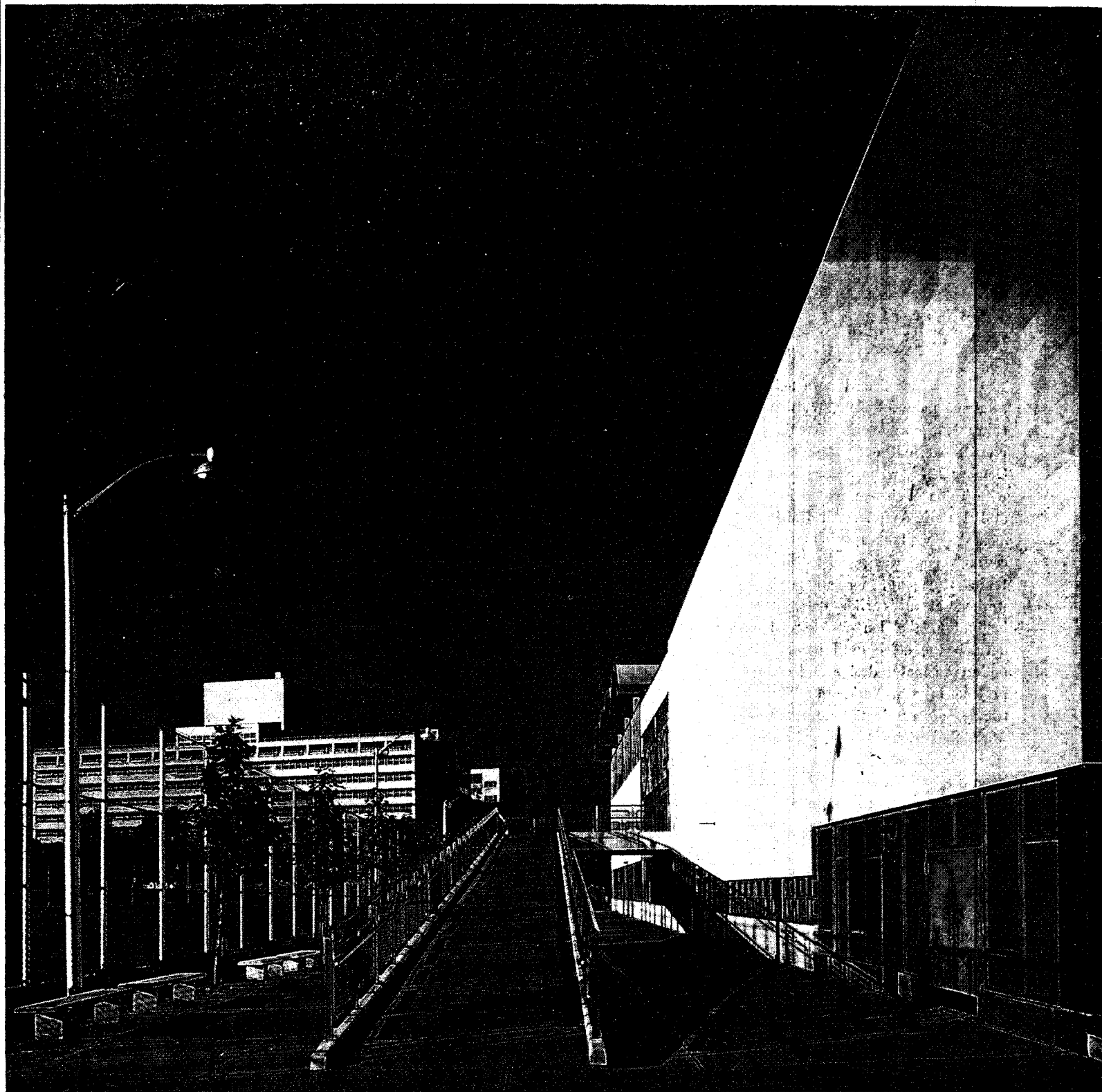


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Architects Associated, New York, New York



Berenice Abbott

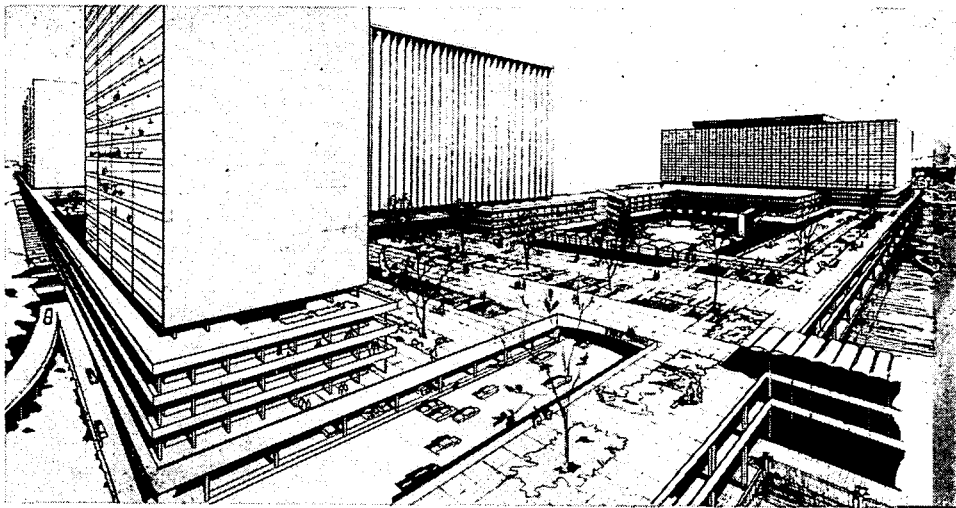
Partners of the firm (seated from left to right): Taina Waisman, Jerome L. Strauss (co-ordinating Engineer), Joseph Blumenkranz, Richard G. Stein, Read Weber; and (standing) Sidney L. Katz.

"The problems of New York have been important to the members of the firm for many years." A number of planning studies were developed with the City Planning Workshop, a voluntary planning group. Other projects, such as a study of the midtown area, Harlem area, and Washington Square area, were student research problems. "One such study (below) started as a student project and, further advanced in the office, became the prize winning design in the Manhattan Redevelopment International Competition sponsored by USA Tomorrow."

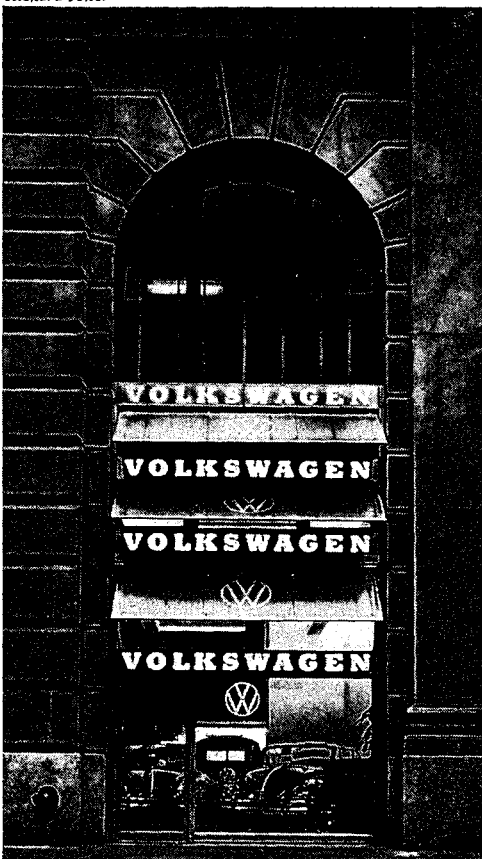
Volkswagen sales room (bottom) is one of a number of showrooms in the city designed by Architects Associated.

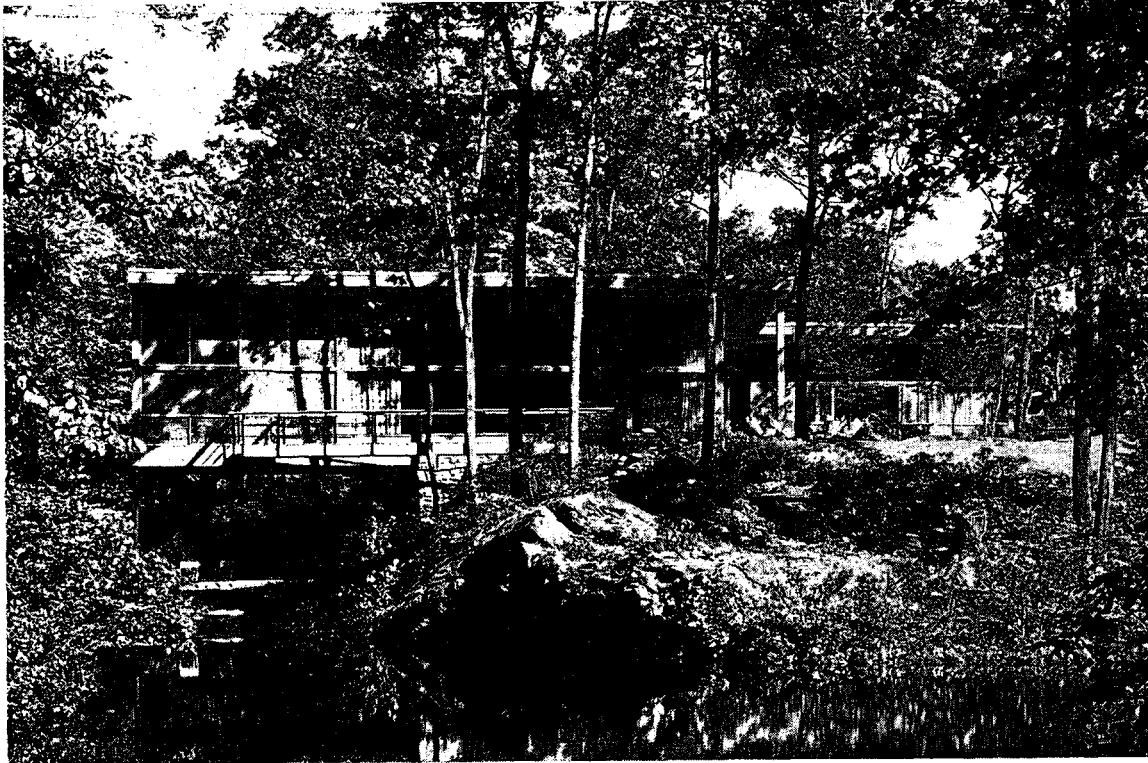
The New York firm, known today by the awesome name of Katz, Waisman, Blumenkranz, Stein, Weber, Architects Associated, started out very modestly in October 1944, when Sidney Katz and his wife Taina Waisman rented a tiny office at 101 Park Avenue. All drafting equipment "as well as a full measure of encouragement" was given to them by Antonin Raymond, for whom both had worked at an earlier date. From the beginning, the long-range goal was to develop the office until it was ready to undertake major design and construction projects in New York. In addition to the trickle of residential and commercial work that came to them in the early years, there was "a huge effort to win some competition money." Success in this line came with the winning of First Prize in both General Motors and American Gas Association contests. Today, the firm has an impressive list of such distinctions.

In 1945, Joseph Blumenkranz, Architect and Hospital Consultant, who had served as Senior Hospital Architect for New York and the Government of Puerto Rico, joined the firm. Following World War II, Richard Stein and Read Weber joined the firm. He was fresh back from service with Army Engineers, and she had worked several years with Frank Lloyd Wright and subsequently with William Lescaze. In 1948, the firm found it could not legally use a shortened name. Hence, the "tongue twister."



Richard Jokel





Commissions range from relatively simple residences to such intricate building plants as Coney Island Hospital (model photo below). The recently completed health center includes a remodeled hospital for the care of the chronically ill, a new 500-bed acute hospital, a teaching center, rehabilitation clinic, extensive out-patient departments, and related service structures. The hospital was designed for the Department of Hospitals by Architects Associated with Andrew J. Thomas, Architect.

Photos (except as noted): Ezra Stoller

There was never any question but that the practice would be in New York—for two solid reasons: the members of the firm like New York, and “it is our community.” And all feel that “nowhere are the problems more challenging; the need greater; and the solutions more basic.” They like the stimulation of participation in its busy cultural life and the unique accumulation of persons working creatively in all the arts. They readily admit that in a city of this size competition for commissions is intense and office space limited and comparatively expensive. Nonetheless, “New York’s problems—planning and sociological problems—are our problems, and we are concerned with their solutions.”

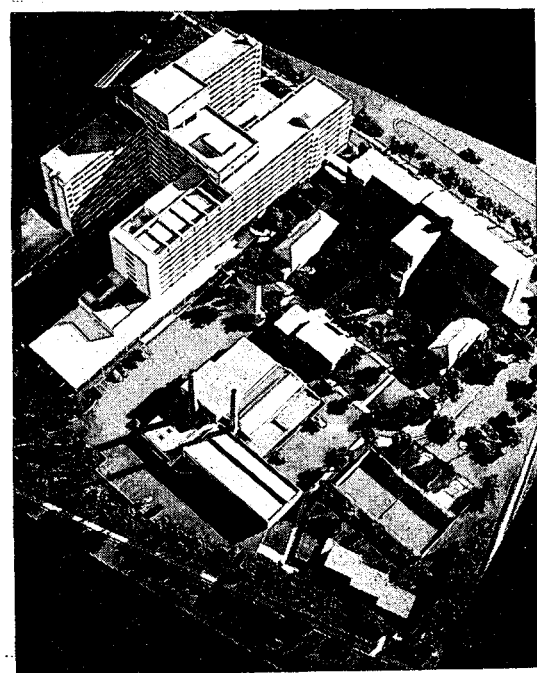
Architects Associated feel strongly that in approach to design, every building needs painstaking study, careful planning, sound structural analysis, realistic cost studies and—a point they stress—intense concern for the people using it. They strive for “a major form and structure that is strong and comprehensible, related to the major program requirements and structural demands. It must provide the spaces, the volumes that are most satisfactory for the building’s intended use. . . . The work of the finest painters and sculptors, working with the architects, must be included.”

The present office force consists of a dozen technical employees, a bookkeeper, three clerical employees, and the six principals—five architects and an engineer.

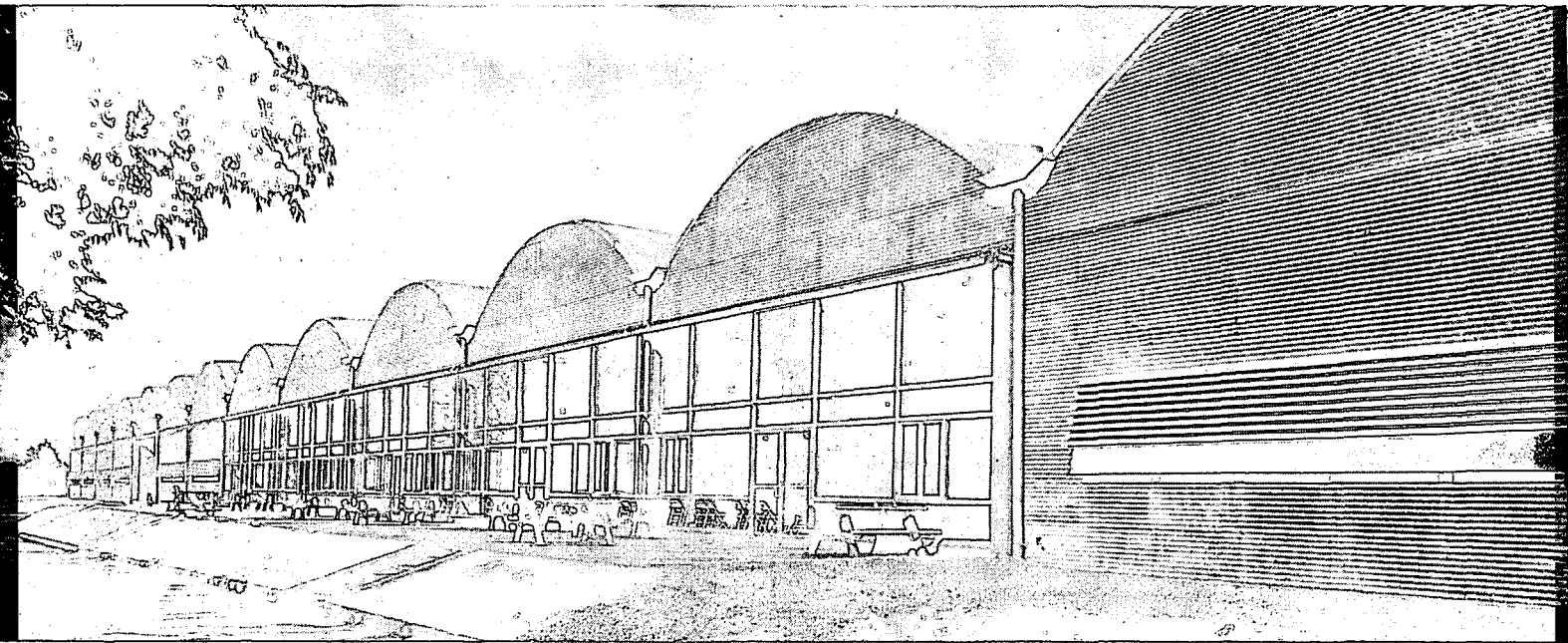
When a new commission arrives, “we decide jointly who will handle it as the partner-in-charge. He or she is responsible for it thereafter though under constant review of all the partners.”

The practice has included hospitals, schools, health centers, dormitories, housing, factories, stores, showrooms, shopping centers, residences, and offices. “At present, we are working on Bellevue Hospital; a hospital for the chronically ill connected with a home for the aged; a large municipal housing project; an elementary school; a school for emotionally disturbed children; a small department store; and a foreign-car showroom. . . . The work on the boards aggregates more than a hundred million dollars—somewhat more than there has been in the past. . . . We enjoy the diversity of the practice and would prefer to increase the diversification rather than limit it.”

Three of the partners teach at either Pratt Institute or Cooper Union. One or more members are active in the AIA; the Citizens Housing and Planning Council; Chelsea Neighborhood Planning and Redevelopment Commission; and neighborhood groups. “We feel that the young people entering the profession are of great importance, and their education to introduce them to the highest level of professionalism, a responsibility of the whole profession.” To that end the firm gives an annual tuition scholarship at Pratt to permit deserving and talented students to go into graduate study.



Photos: Hedrich-Blessing



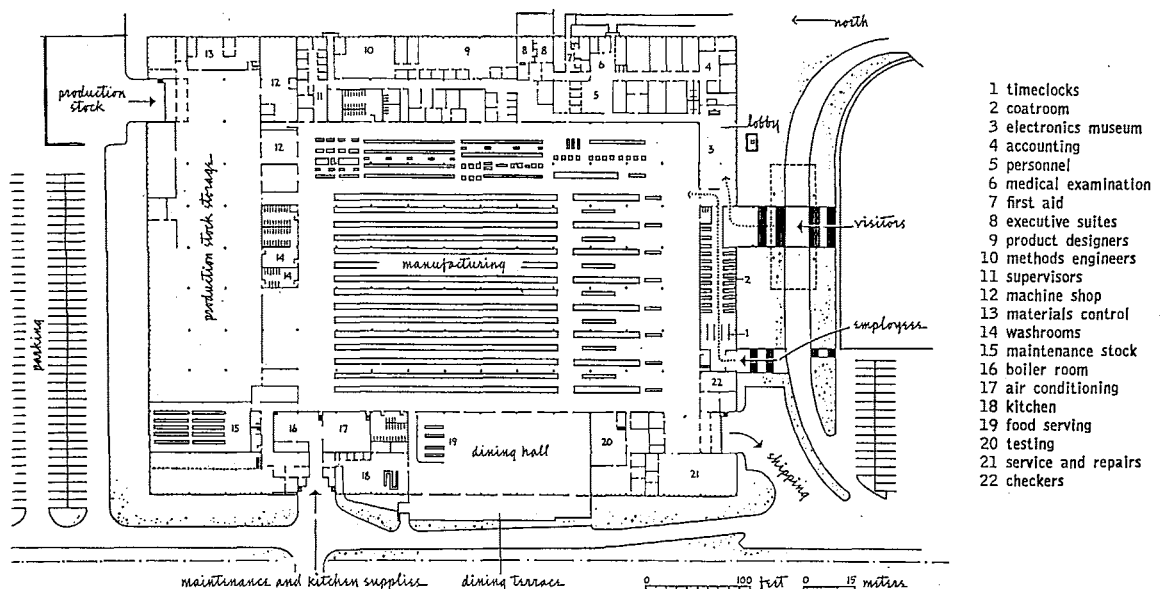
TV Components Plant

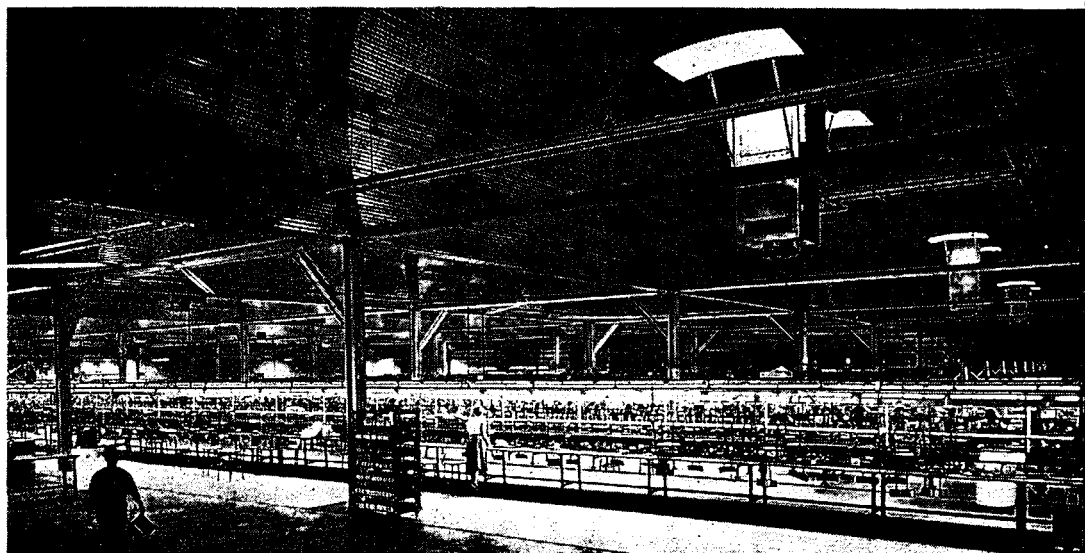
In this factory for Bloomington, Indiana—incidentally one of the few buildings designed by Architects Associated erected outside the New York region—the client wished to centralize all of his manufacturing operations. The plant was to be built speedily, and at minimum cost. The objective was achieved by a 250,000 sq ft production plant for 2000 to 3000 workers erected in nine months at a cost of \$4 per sq ft. Facilities comprise not only

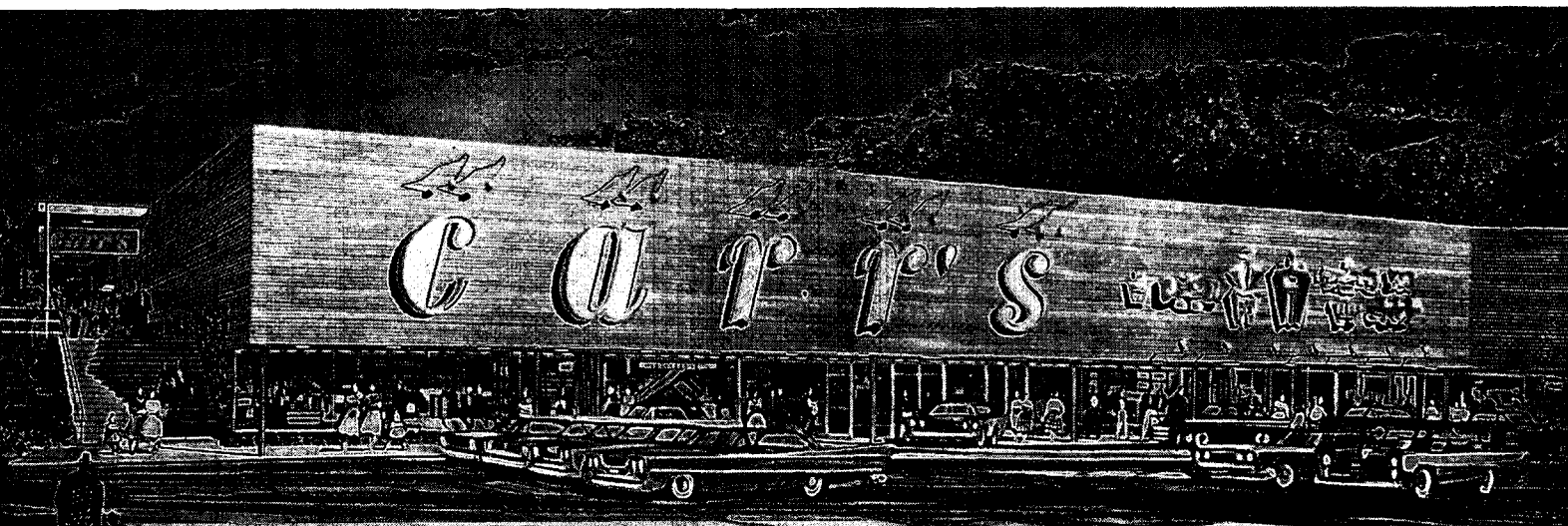
the spaces required for the manufacture of electronic parts, but also areas for medical, social, and recreational use for factory personnel as well as members of the community. A large hall doubles as dining room for 1000 employees and a community hall for movies and dances. Construction consists of steel barrel vaults which gave extra height at no added cost, and, with blanket insulation sandwiched between the double roof skin, gave the

desired insulative quality for a climate of extremes. Warm-air distributors were specified to heat the area in winter, and to supply air changes during the summer. Acoustically, the barrel vaults were found to be highly suitable since production noises were contained within each bay. Benjamin L. Spivak was Mechanical Engineering Consultant; Jerome L. Strauss, Plant Layout Consultant.

For Construction Outline, see page 226.





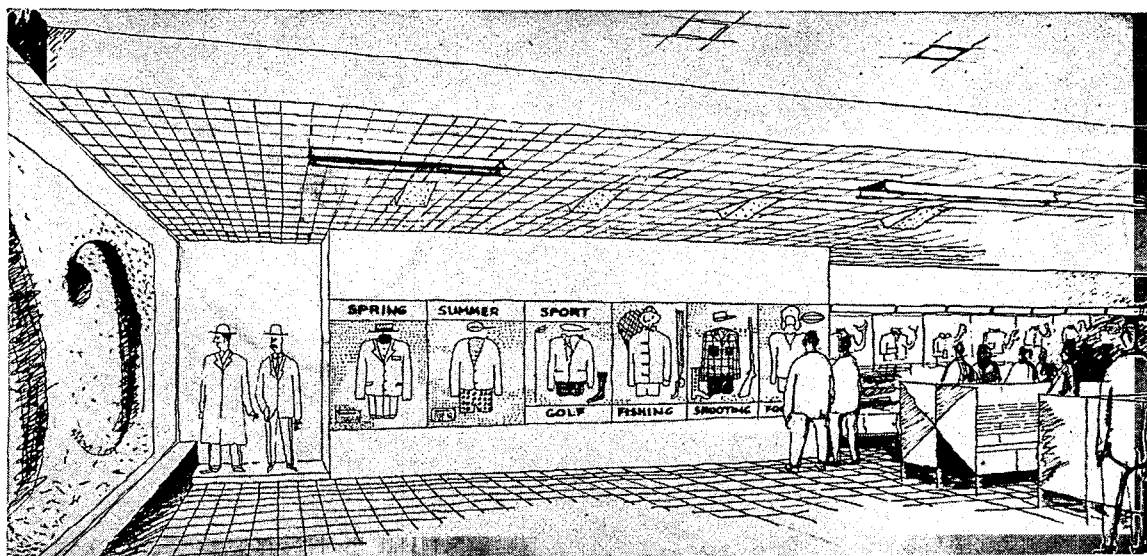


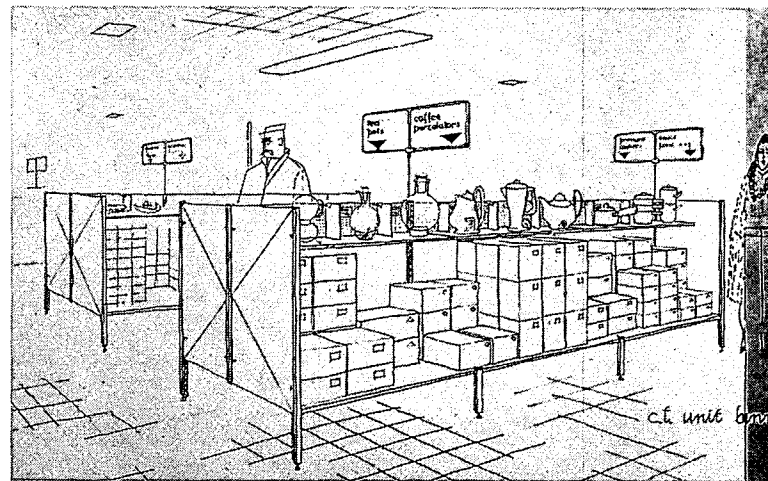
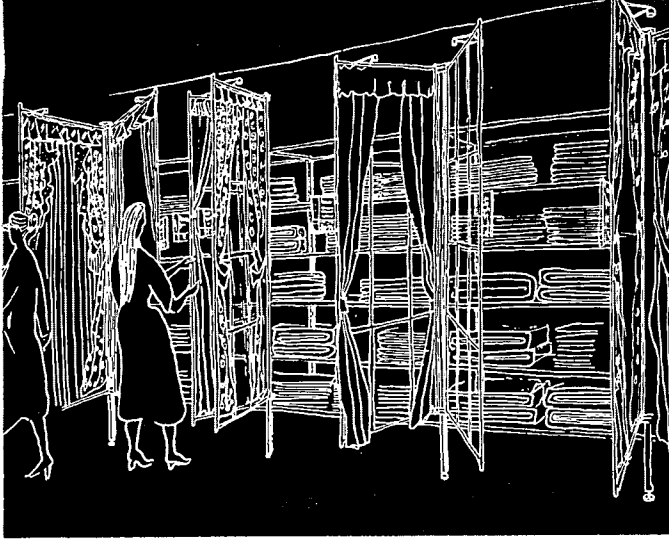
self-selection department store

In this instance Architects Associated not only translated the building requirements into architecture but established, together with the client, the basis for a new merchandising process and shopping environment. Customers in this recently opened store may select from specially designed sales racks which incorporate both display and stock; or may be directed to stock-room windows for special items; and leave the store past checkout counters not unlike those in a super-

market. Departures which mark this new store in West Orange, New Jersey, from the conventional department store are the following: 1. complete elimination of sales counters in favor of steel fixtures for merchandise display, wrap-up counters, package consolidation points, check-out counters; 2. strong regularity of plan to provide order despite great profusion of merchandise; 3. use of color as an aid to identification of individual departments. Merchandise, however, is seen

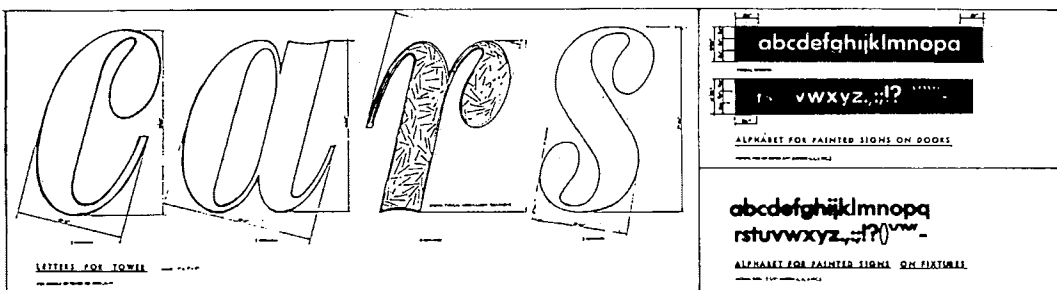
against white, gray, or black. 4. high intensity lighting at merchandise level, moderate intensity at ceiling; 5. uniformity of all graphic markers and lettering throughout the store; 6. consistency in design details of such items as pin-tickets, labels, binning strips, shopping bags. Typographic standards and display symbols were developed by Ladislav Sutnar; a sculpture by Costantino Nivola; nonpermanent display by Tom Lee.





cash counter

Sales fixtures (above) are designed for display of merchandise as well as storage of wrapped articles for self-selection. On completion of shopping tour customers pass check-out counters (left). All lettering is co-ordinated using specially designed lower-case letters—bold italics for logotype, and vertical sans-serif type to convey information.



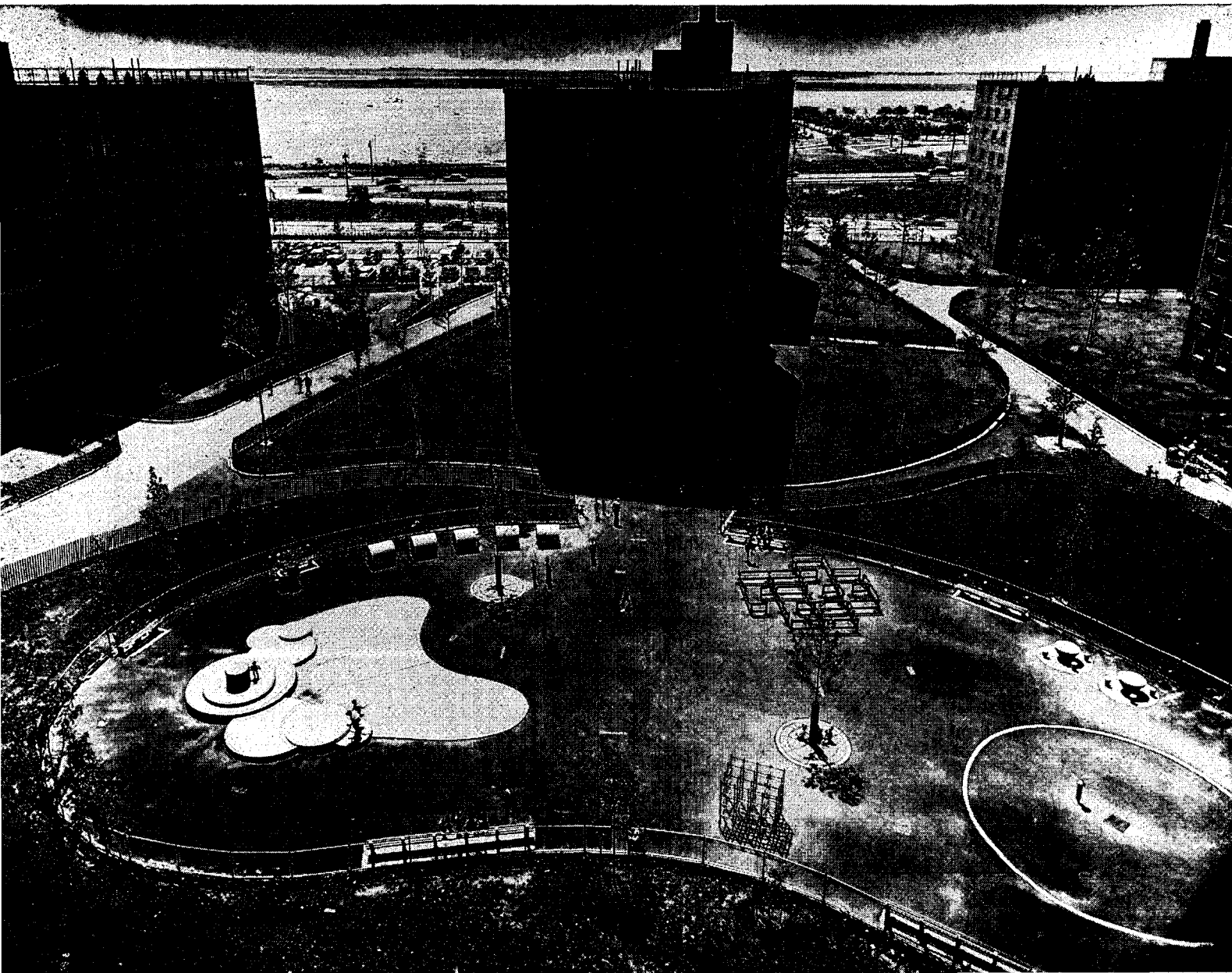


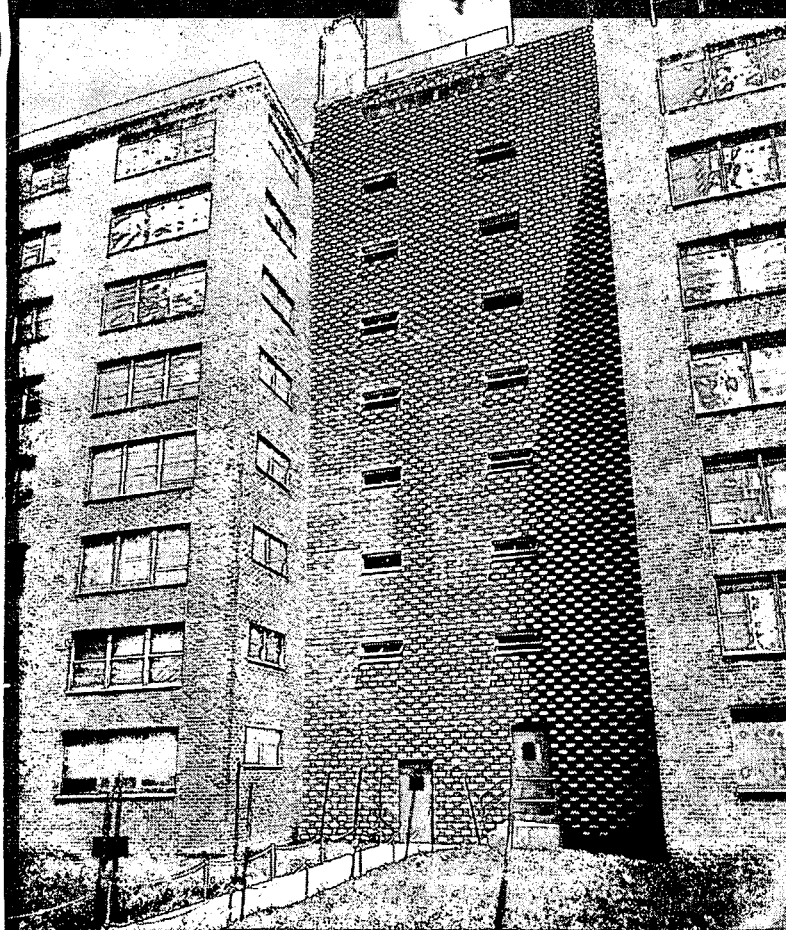
middle-income housing

Bay View Houses in Brooklyn were constructed by the New York Housing Authority in an effort to alleviate the shortage of middle income housing. Under this program funds are provided by the City and repaid entirely by rentals. Of the 30 acres adjoining a seaside park, 25 percent is covered by the buildings, the remainder is devoted to playgrounds and parks. "In order to avoid the institutional quality of the vast housing project," write Architects Associated, "we

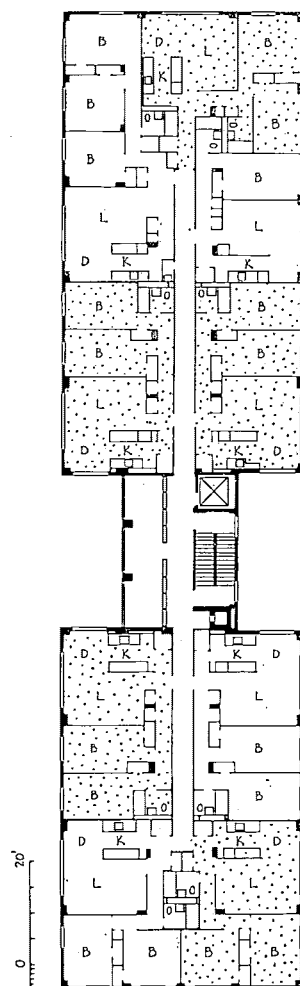
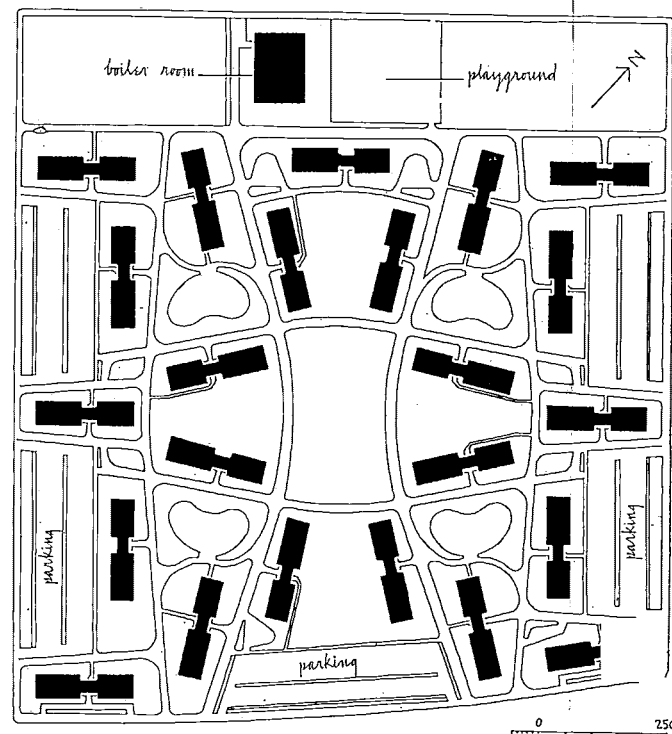
broke the area into four neighborhood quadrants, each with its own central playground, sub play and sitting areas. The visual result is gratifying—from the center of each of these areas the scale becomes more human and intimate." Each quadrant has been given an identifying color—yellow, blue, brown, green—for balcony columns, glazed brick patterns, lobby trim, numerals, and signs. Screened balconies, their first use in city-sponsored housing, are for the use of the nine

families on each floor. For economy and freedom in apartment planning a flat-slab and reinforced-concrete framing system was chosen. Exterior walls are cavity brick and block construction. Plaster is applied directly to the blocks on the interior. Structural Engineering Consultants, Farkas & Barron; Mechanical Engineering Consultant, Guy B. Panero; Landscape Consultants, Clarke & Rapuano; Lettering, Arnold Bank; General Contractor, C. E. Youngdahl.



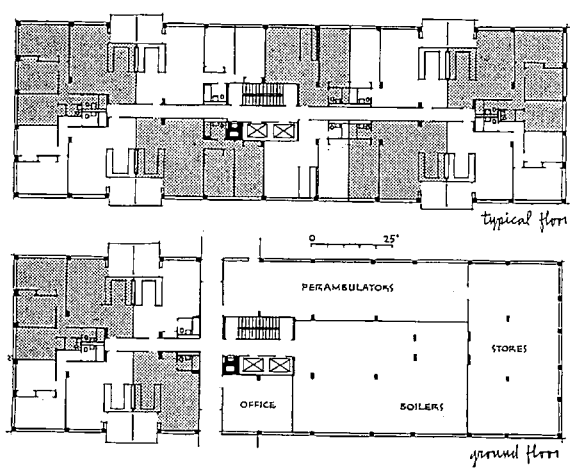


Photos: Berenice Abbott





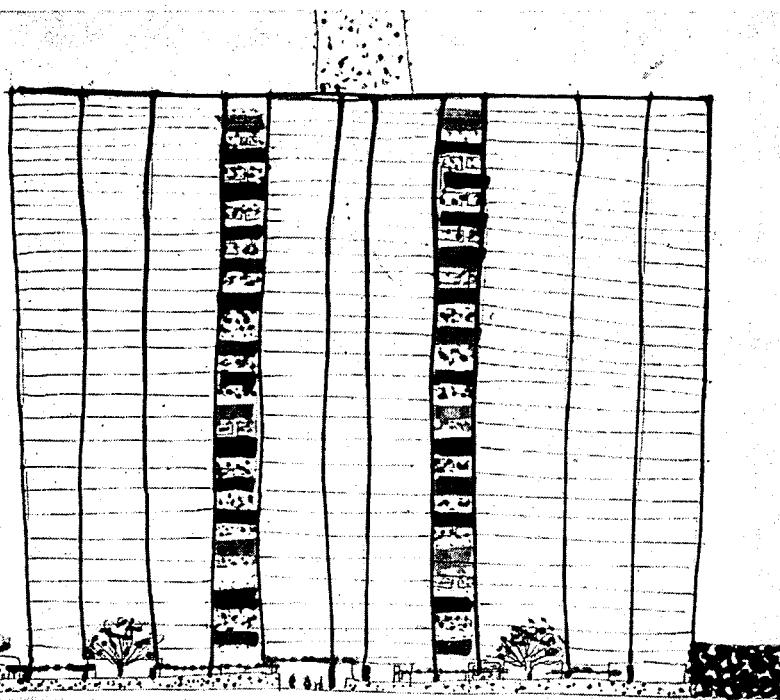
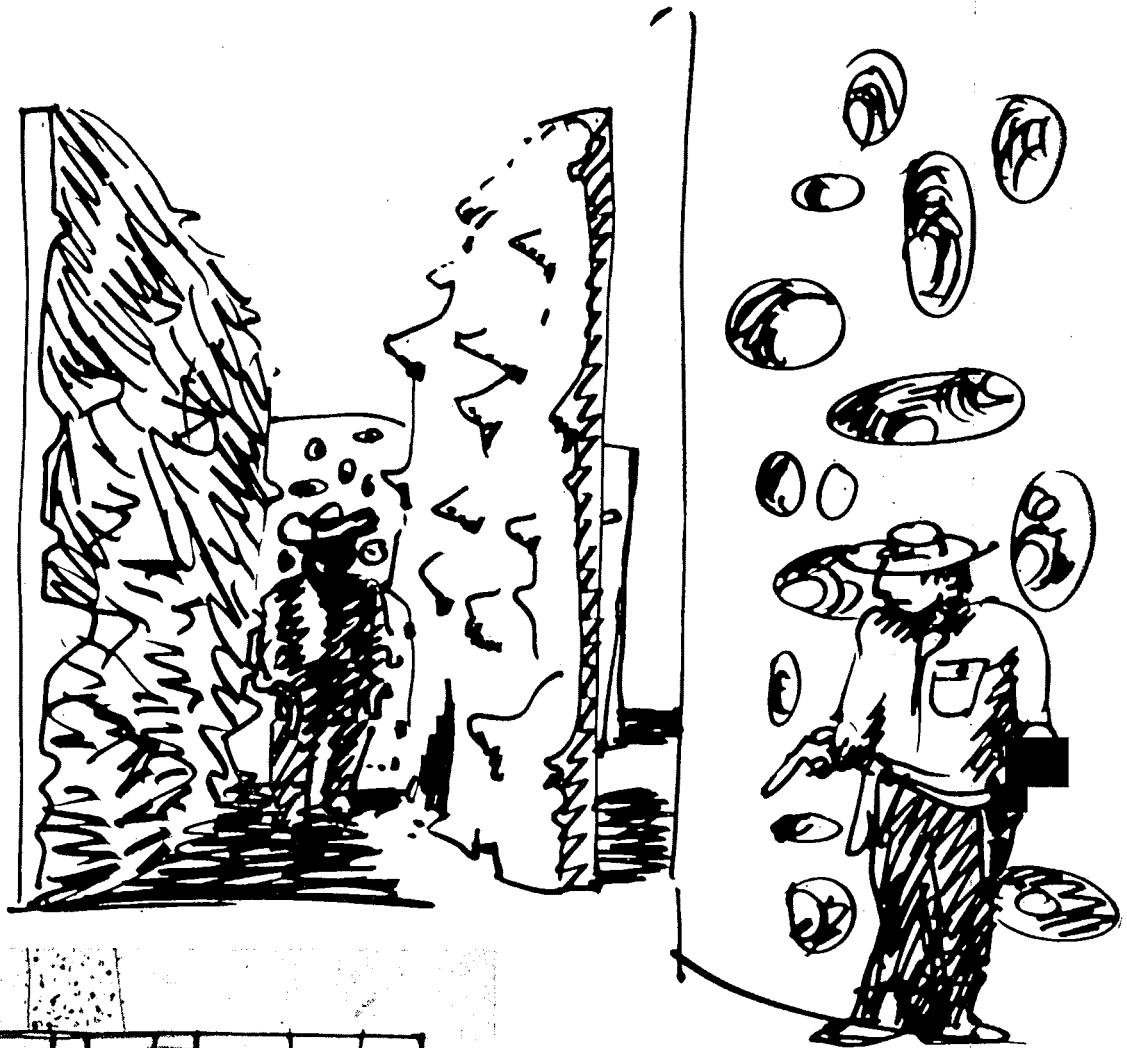
co-operative housing

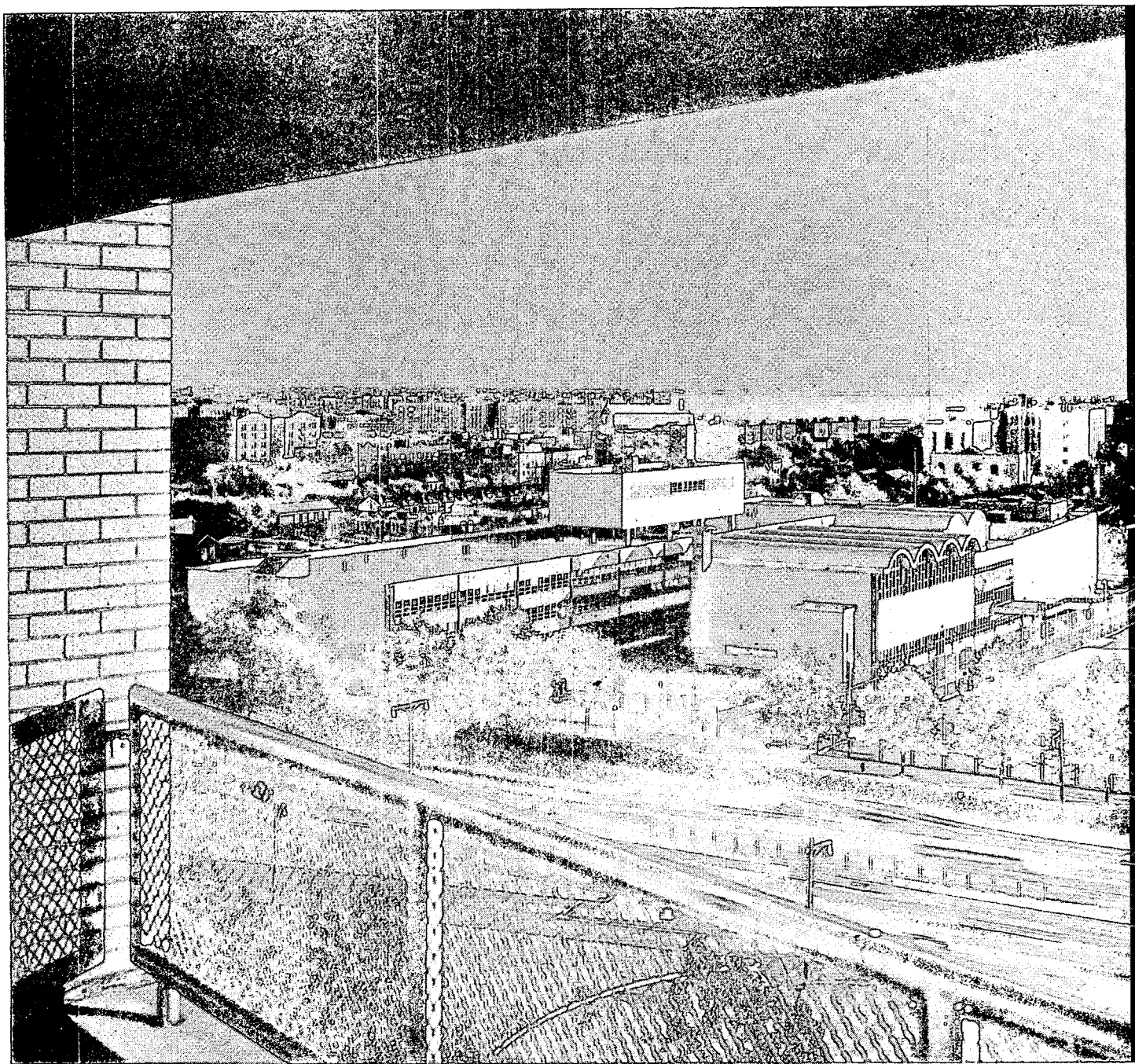


Mutual Apartments, Inc., a 160-unit co-operative housing development in Brooklyn, New York, was built under the provisions of New York's Mitchell Lama Law. Under this statute the State may lend 90 percent of the development cost to private developers for the purpose of building limited profit housing for the moderate income level. A small number of the apartments have been specially designed for the aging. The relatively small and flat site left little choice in the place-

ment of the building. However, considerable thought was given to making the limited area as useful and attractive as possible. To further this cause, Costantino Nivola was asked to collaborate in the design of playground sculpture (*below*) and to study the use of color in the project. Color has been introduced at slabs and dividing walls of all balconies. Structurally the building is of interest for employing pre-cast concrete wall panels—the first use of prefabrication tech-

niques in multistory housing in this area. The panels are 8" thick and have an integral interior and exterior finish. Sizes of the panels vary from 3'-6" x 4'-0" to 4'-0" x 10'-0". Part of the reinforced concrete frame has been left exposed. Window frames are of aluminum. Architects Associated were assisted by Structural Engineers Fraioli-Blum-Yesselman; Mechanical Engineer C. J. Wurmfeld; Landscape Architect Leo Novick; Rhein-stein Construction Co., Inc., Builder.





vocational high school

One of the most intricate design problems which Architects Associated have had to solve was this vocational school for 2000 boys in Brooklyn, New York. Not only was it necessary to overcome the physical limitations imposed by a restricted city site, but also the complexities of the mechanical and pedagogical program as well as psychological considerations. "To combat the prevalent misconception that this was a step above a

reform school," write the architects, "we felt it was necessary to make the environment as dignified, inspiring, and significant as we could." This wish is evident in every facet of the school—in the articulation of the architectural spaces, in materials and colors, in the attention given to details such as display cases and lettering, and above all in the inclusion of two major pieces of art, a sculpture and a mosaic mural. The vocational train-

ing shops were the subject of a special study by Partner Jerome L. Strauss, in co-operation with representatives of the Board of Education. Shops were generally placed in proximity to academic classrooms so that psychologically, as well as physically, theory and practice will be closely joined. Other criteria in planning the school were separation of the areas to be used by the community, integration of gym and play fields, and place-

ment of noisy shops away from the street. These considerations, with other restrictions such as location of existing sewers and roads, determined the distribution of the building elements. Heavy loads, large spans, and poor soil conditions requiring pile foundations, made steel a more economical structural material than concrete. Columns in the classrooms and shops are set back from the exterior wall to allow heat risers to pass unobstructed, and

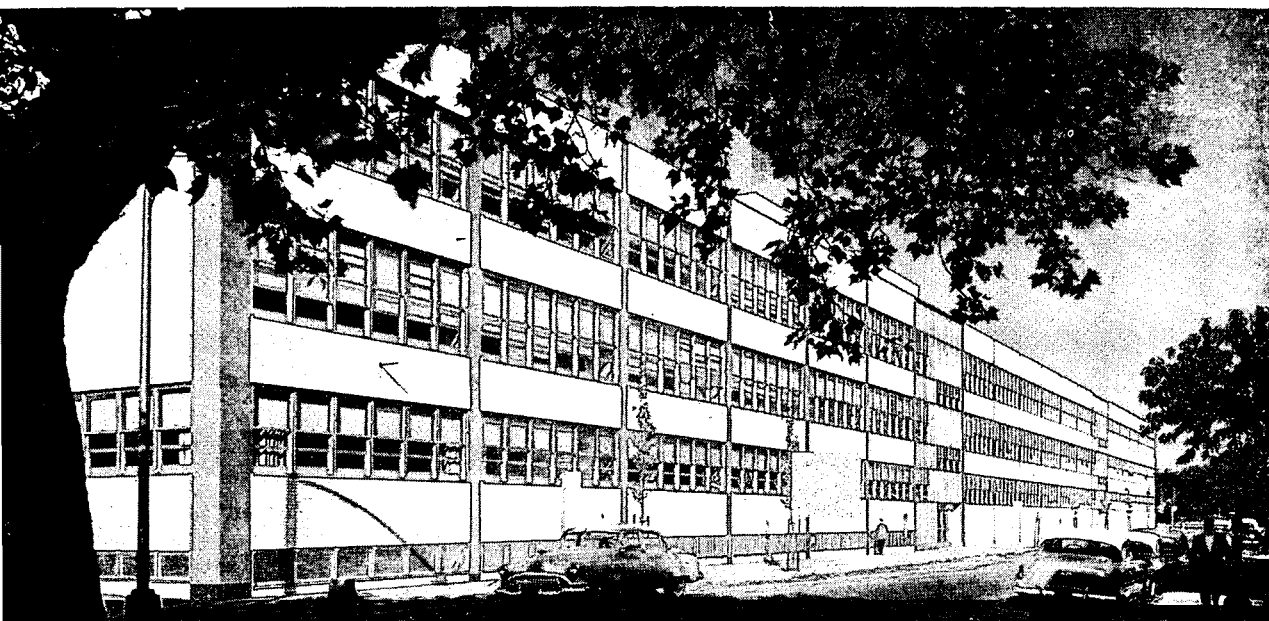
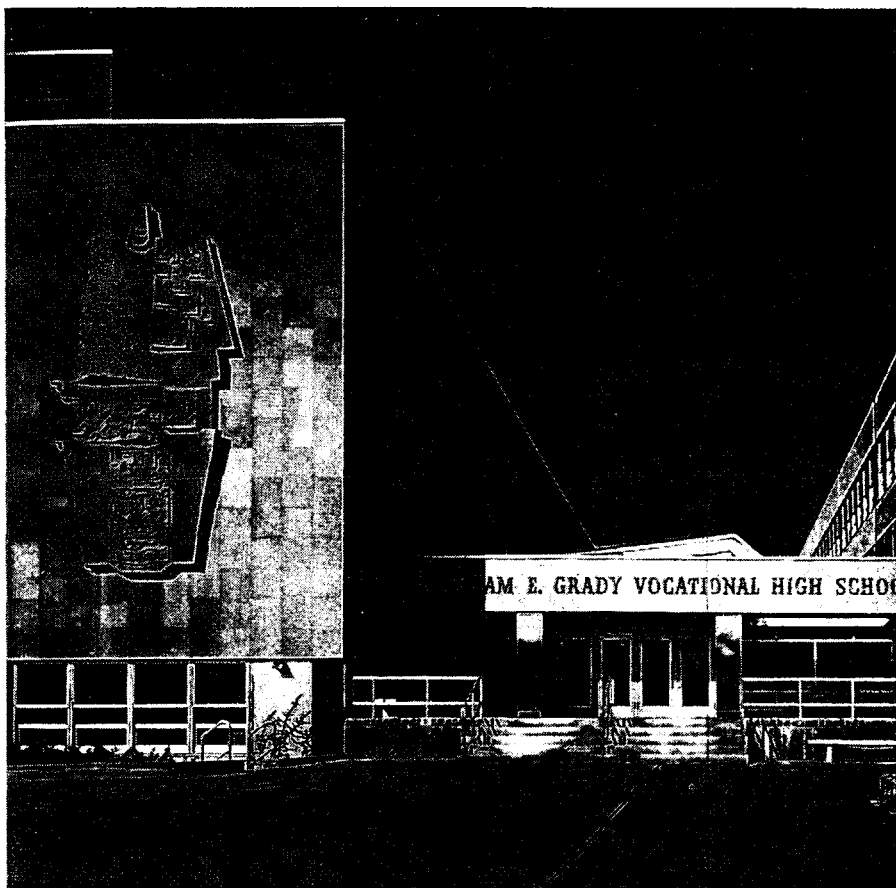
maintain wall-to-wall fenestration.

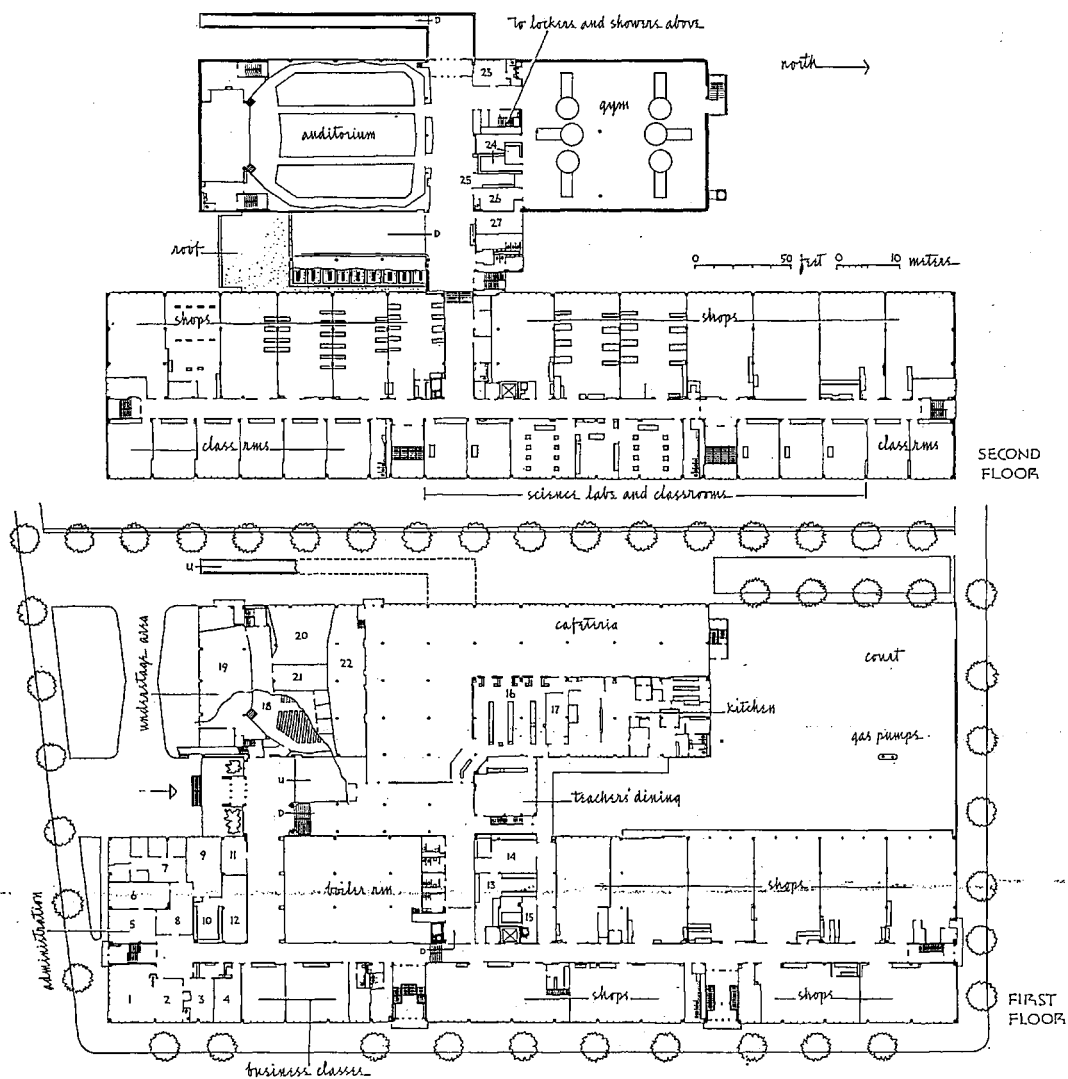
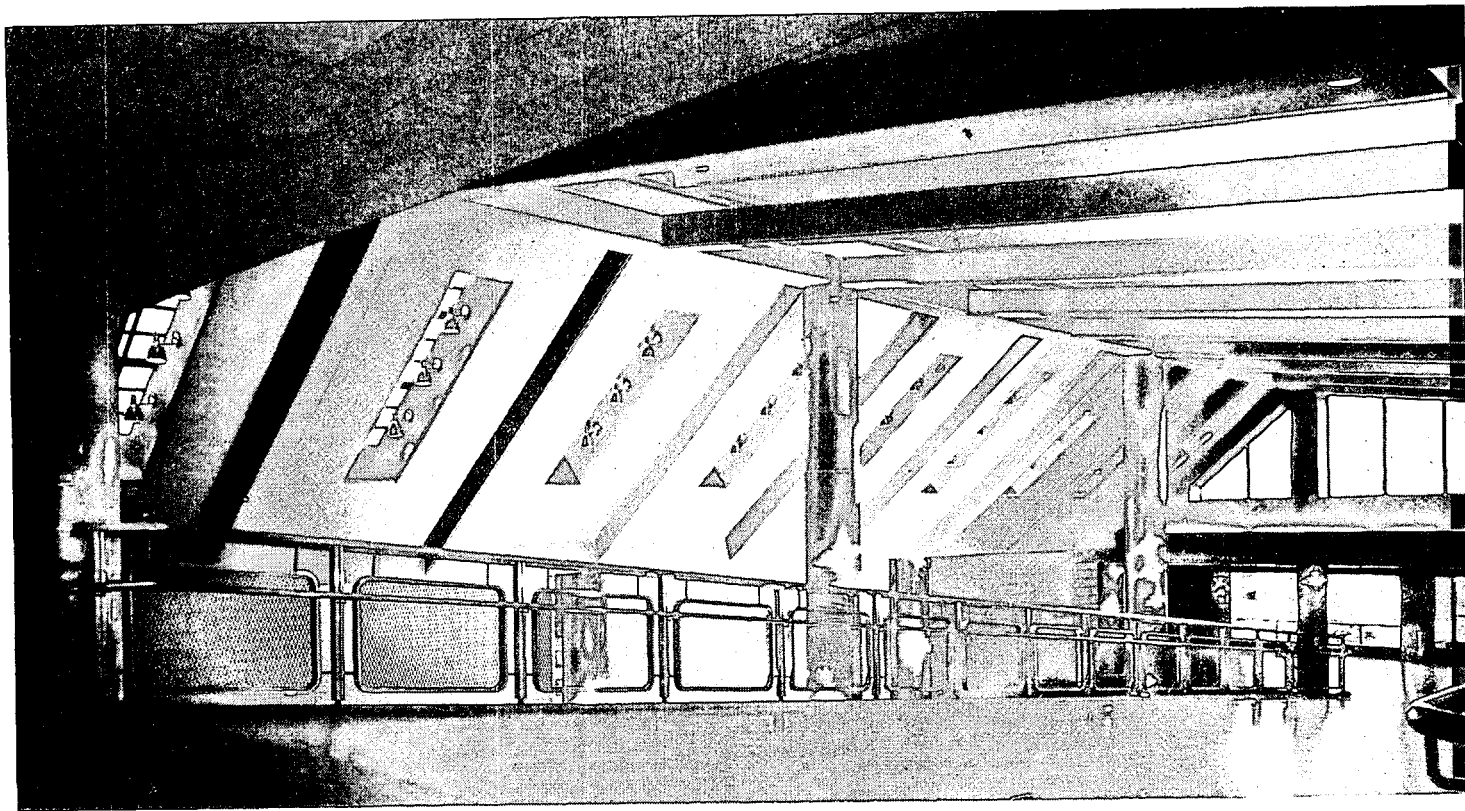
Besides the architects, who in 1955 received a P/A Award Citation for the design of this school, the following contributed to the success of the completed structure: Charles J. Bensley, Chairman, Committee on Buildings and Sites for Board of Education; Dr. David H. Moskowitz, Associate Superintendent, Division of Housing for Superintendent of Schools; William H. Correale, Superintendent of

School Buildings, Design and Construction; Michael L. Radoslovich, Director of Architecture; Carl A. Peterson, Chief Engineer for the Bureau of Construction. Farkas & Barron were the Structural Engineers; Benjamin L. Spivak, Mechanical Engineer; Michael J. Kodaras, Acoustical Consultant; John C. Mason, Food Service Equipment Consultant; Leo A. Novick, Landscape Architect; Caristo Construction Corporation, General Contractor.

Main entrance (right) forms a link between classroom/shop/administration wing (below) and block containing gym, auditorium, and cafeteria. Letters mounted on entrance canopy are of cast aluminum, designed by Arnold Bank. Cast concrete sculpture, mounted on limestone-faced wall of auditorium, is by Costantino Nivola. A mosaic mural by Ben Shahn, located above entrance to gym and auditorium, is visible in view from Coney Island Hospital (acrosspage, also color photo). Major exterior materials are brick, limestone, aluminum, and porcelain enamel.

Photos: Ezra Stoller

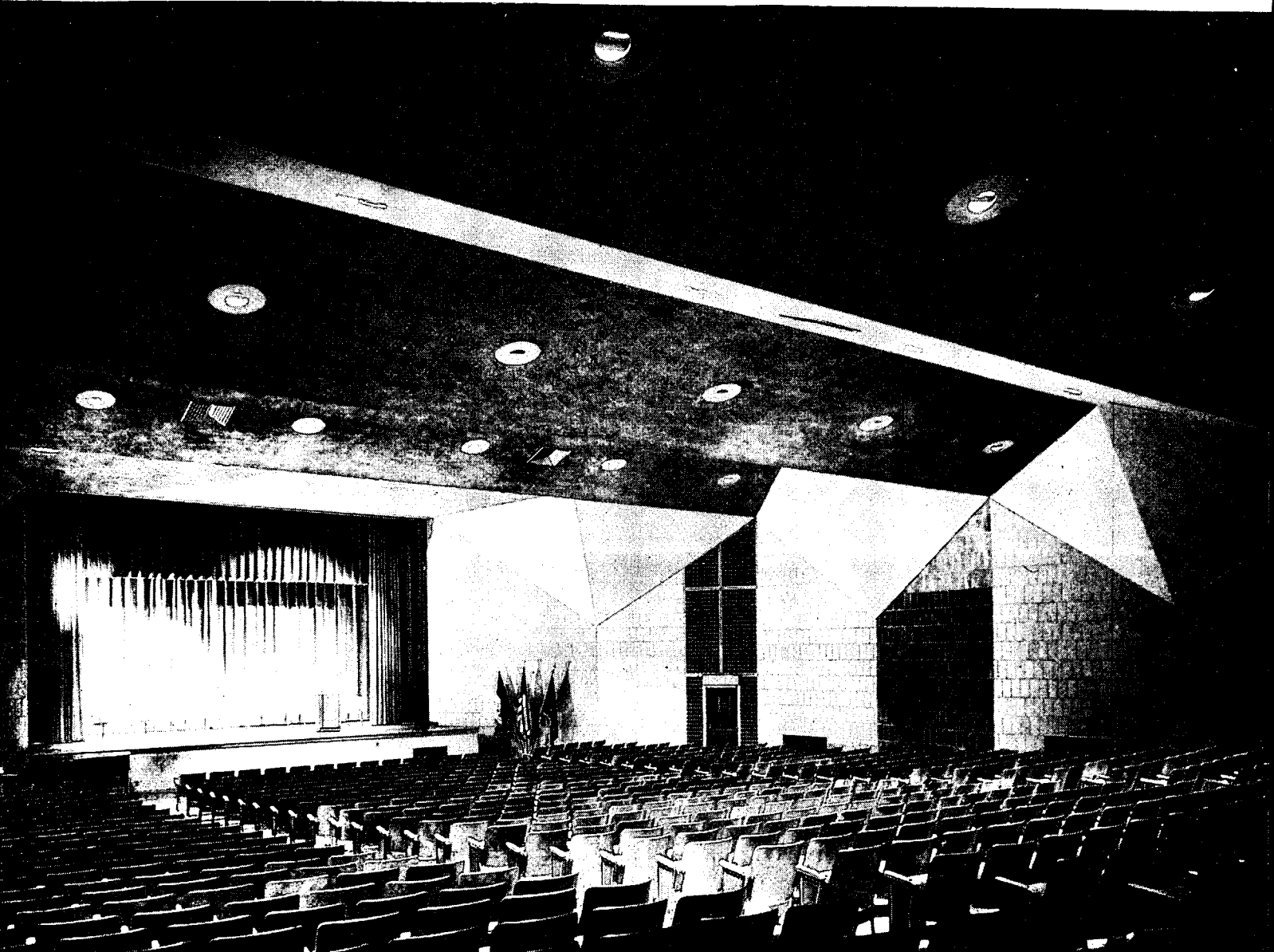
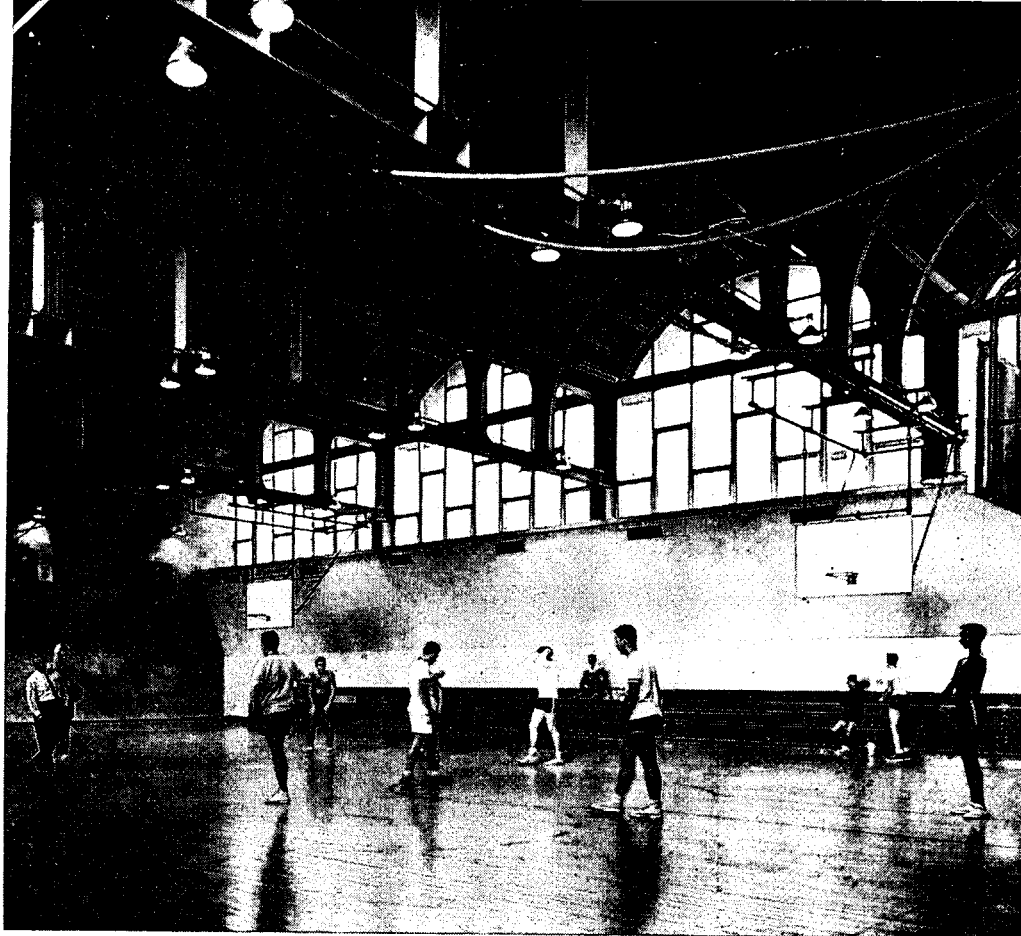




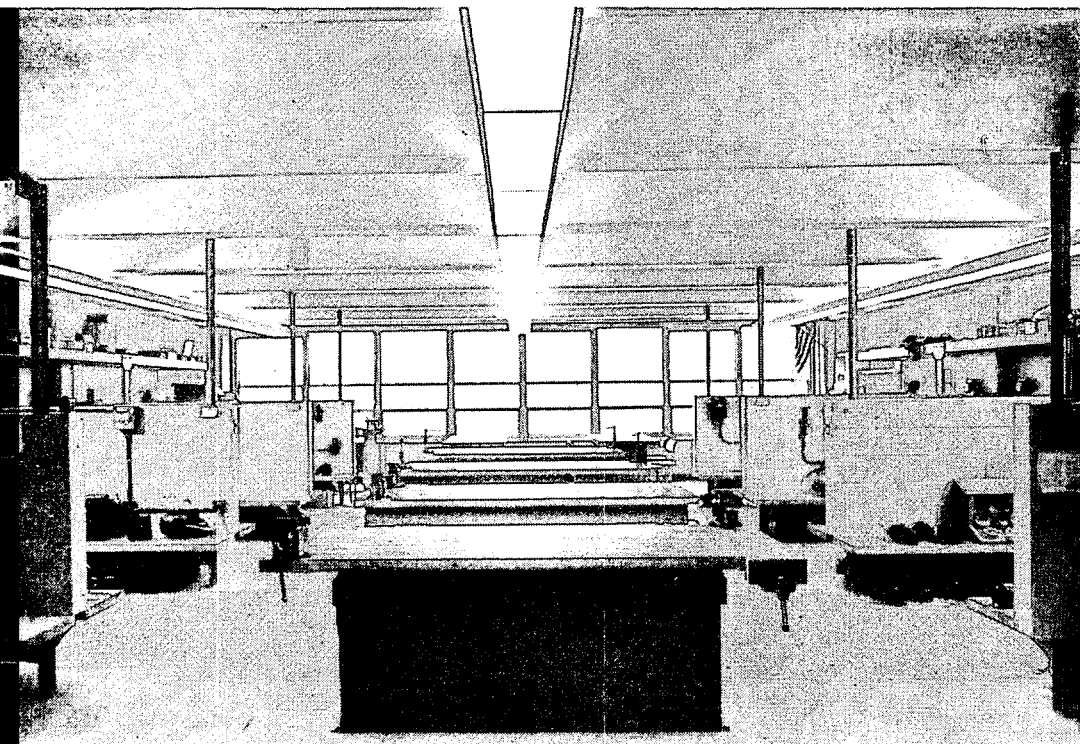
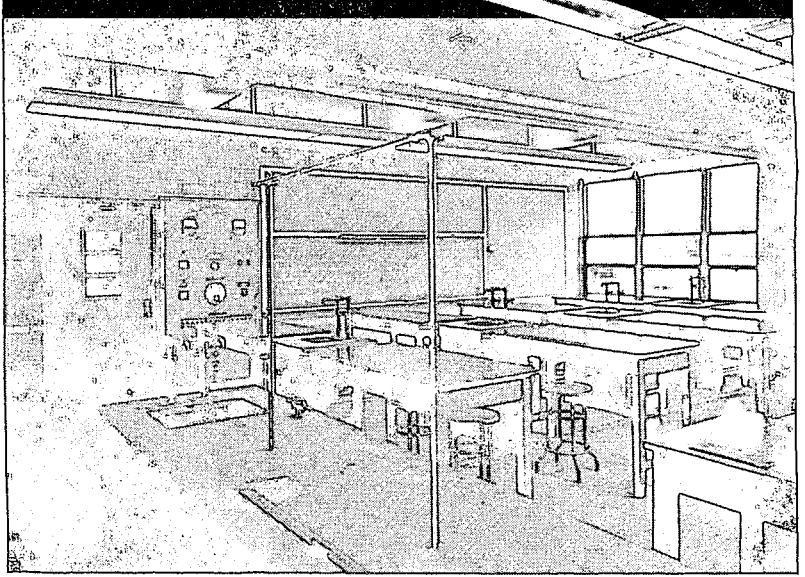
These areas, also intended for community use, may be partitioned off from classroom/shop/administration wing. Main lobby (acrosspage left) is dramatic skylit space with broad ramp leading to auditorium (below), and gym (right). To avoid maintenance problems, corridor walls are surfaced with plastic-coated concrete block; lobby and cafeteria columns with stainless steel; floors with terrazzo, blue stone, concrete.

In the auditorium absorptive and reflective surfaces are carefully balanced. Materials included are masonry blocks with cellular-aggregate, sprayed ceiling finish protected by colored vinyl skin, ceiling baffles of white plaster, and fireproofed plywood with acoustic backing.

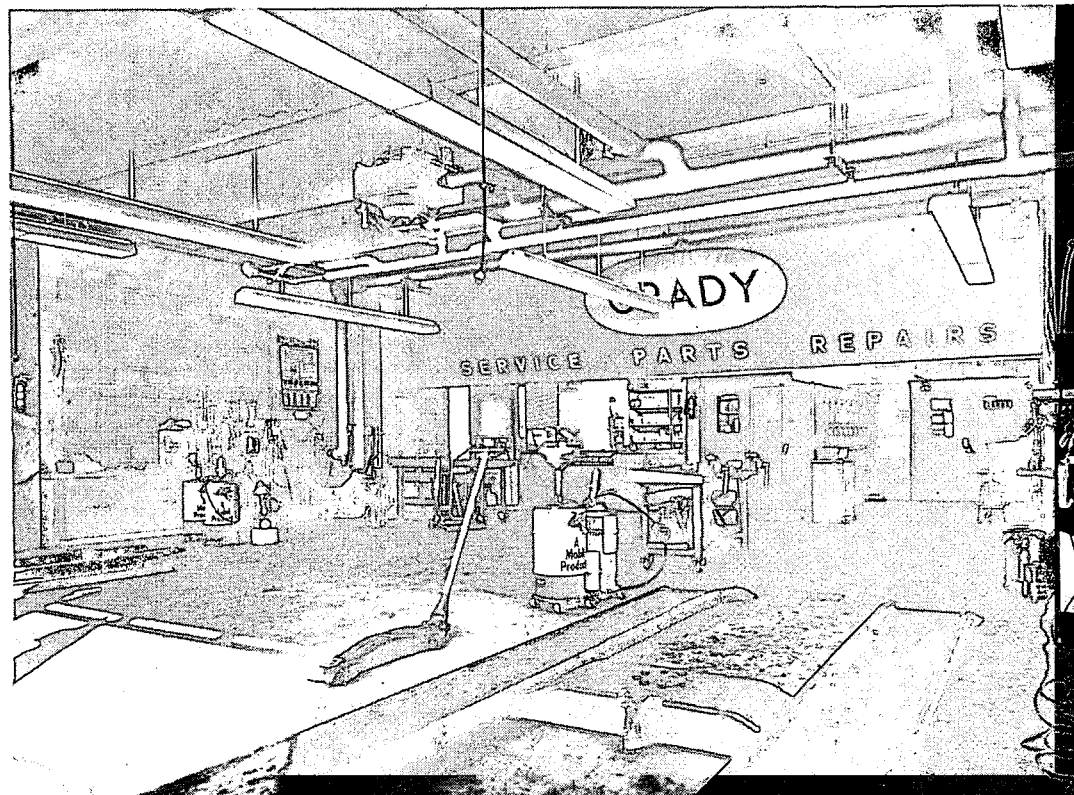
The gymnasium combines plastic-faced blocks in vulnerable areas with blocks of lightweight masonry above. A series of Vierandel trusses support the roof structure. Lightweight concrete channel slabs form the roof decking.



A total of 32 shops is provided in the three-story classroom/shop wing and a fourth floor, to be added later, will provide vocational training facilities for 500 girls. Floors have double-loaded corridors with shops on one side, related academic classrooms on the other. Store rooms, lockers, and mechanical spaces serve as sound buffers. In shops and service spaces, masonry blocks have been left unpainted and the structure left exposed.



Structurally the spatial needs in the classroom and shop wing were answered by a noncontinuous steel frame in which the typical bay spacing stops at the corridor. Shops have an unobstructed area of 35'x50' and were designed for a live load of 100#. Heating is radiant on the lowest floor, convectors above, with unit heaters in special locations. Exhaust ventilation has been provided in classrooms, corridors, and toilets. Basic lighting is fluorescent with supplementary incandescent fixtures in certain areas.

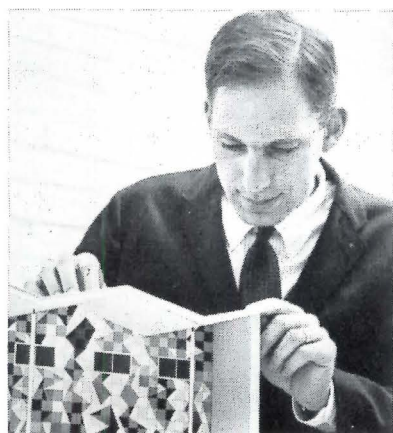




West front of building (above) faces playground developed by Park Department. Cafeteria is at ground level and opens onto a terrace paved with colored concrete squares, and lined with trees and benches. Ramp leading to gym and auditorium is kept ice-free by radiant heat.

From main lobby (right) at the south side of the building stairs lead down to cafeteria; a ramp up to auditorium and gym; and exhibit gallery to classroom/shop/administration wing.





the Work of Samuel G. Wiener, Jr.





To enrich the interior of Congregation Beth El Synagogue in South Orange, New Jersey, designed by Davis, Brody & Wisniewski, Architects, Wiener designed tapestries (acrosspage below) using religious symbols as decorative motifs. In the glass side walls (acrosspage above) of the synagogue's sanctuary, the transition from brilliantly colored leaded glass panels through darker and lighter gray glass to clear glass at top solves problems of, 1. reducing heat load and glare (colored glass); 2. maintaining visual effect of roof floating (with view of roof overhang through clear glass); 3. small budget (minimum use of expensive leaded stained glass). Tapestry executed by Edward Fields, Inc.; stained glass by M. & J. McLoughlin Studios, New York.

Pair of mosaic panels (below and detail left) are bright focal points on brick interior wall of Marjorie Lyons Playhouse for Centenary College in Shreveport, Louisiana: Samuel G. Wiener, Architect.

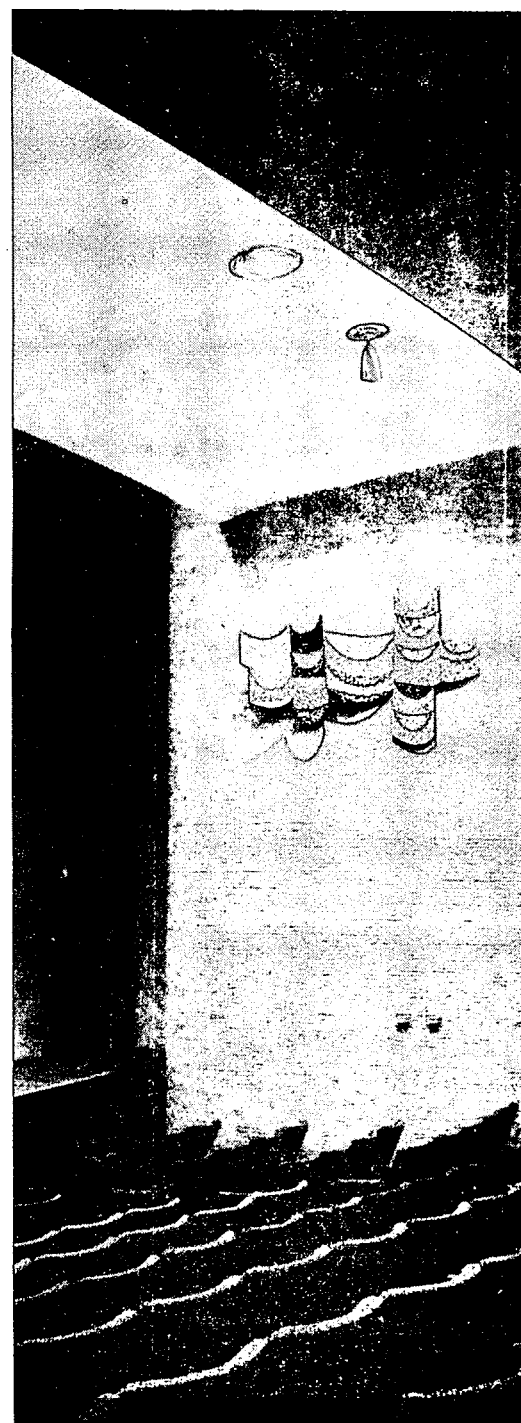
Photos (except as noted): Thurman C. Smith

"I try to make the available materials work to add interest and excitement to what might otherwise be plain and unenticing," writes Samuel G. Wiener, Jr., "or to use materials which will add to the richness, or beauty, or fun in the visual experience of the building."

Wiener has long been interested in architecture. He studied architecture before graduating from Yale as a painter in 1951, and worked as a draftsman in an architectural office. His father and uncle are architects; architecture was everyday conversation in his family. This intimate familiarity with building determines, perhaps, the artist's conviction that "art should make the architecture more beautiful, not that the building is a fine frame for my art."

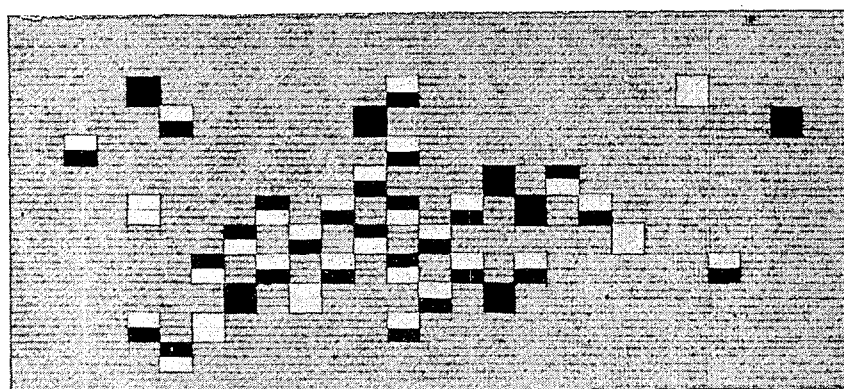
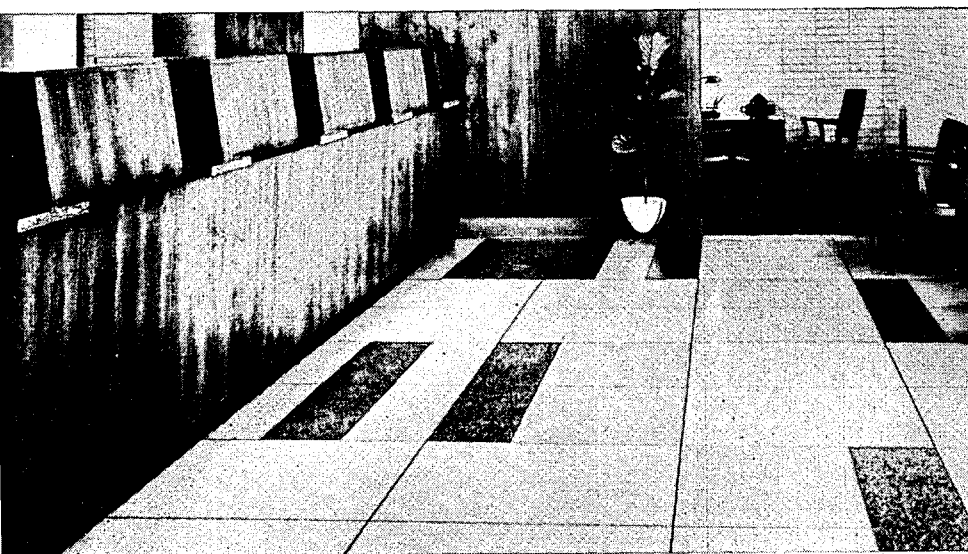
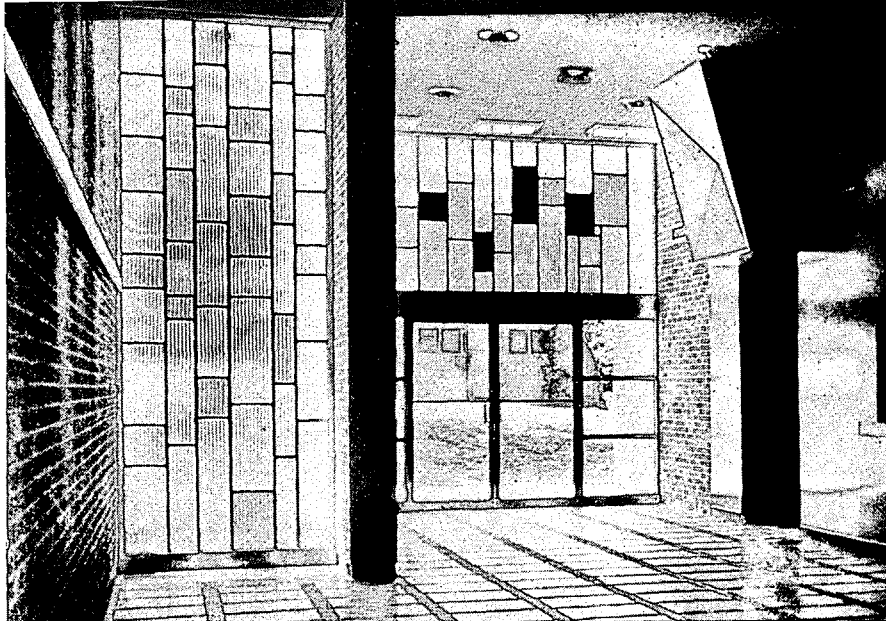
In addition to many collaborations with his father and uncle, he has worked on architectural commissions with Percival Goodman; Mayer, Whittlesey & Glass; Michael Radoslovich, Director of Architecture for Board of Education of City of New York; Daniel Schwartzman, and others.

The finest instances of the amalgamation of art and architecture, he feels, are the monuments of the Mediterranean region which he visited while on tour with the Navy. Ravenna in particular exerted great influence on his work and gave added impetus and direction to this young artist, whose main concern is the total harmonic end result.



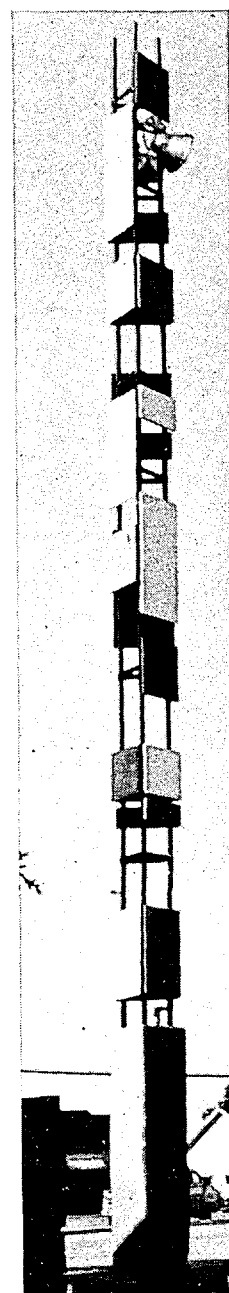
Entrance area (right) for Marjorie Lyons Playhouse employs fluted clear and amber glass panels divided by standard aluminum strips. Dark panels above door are aluminum.

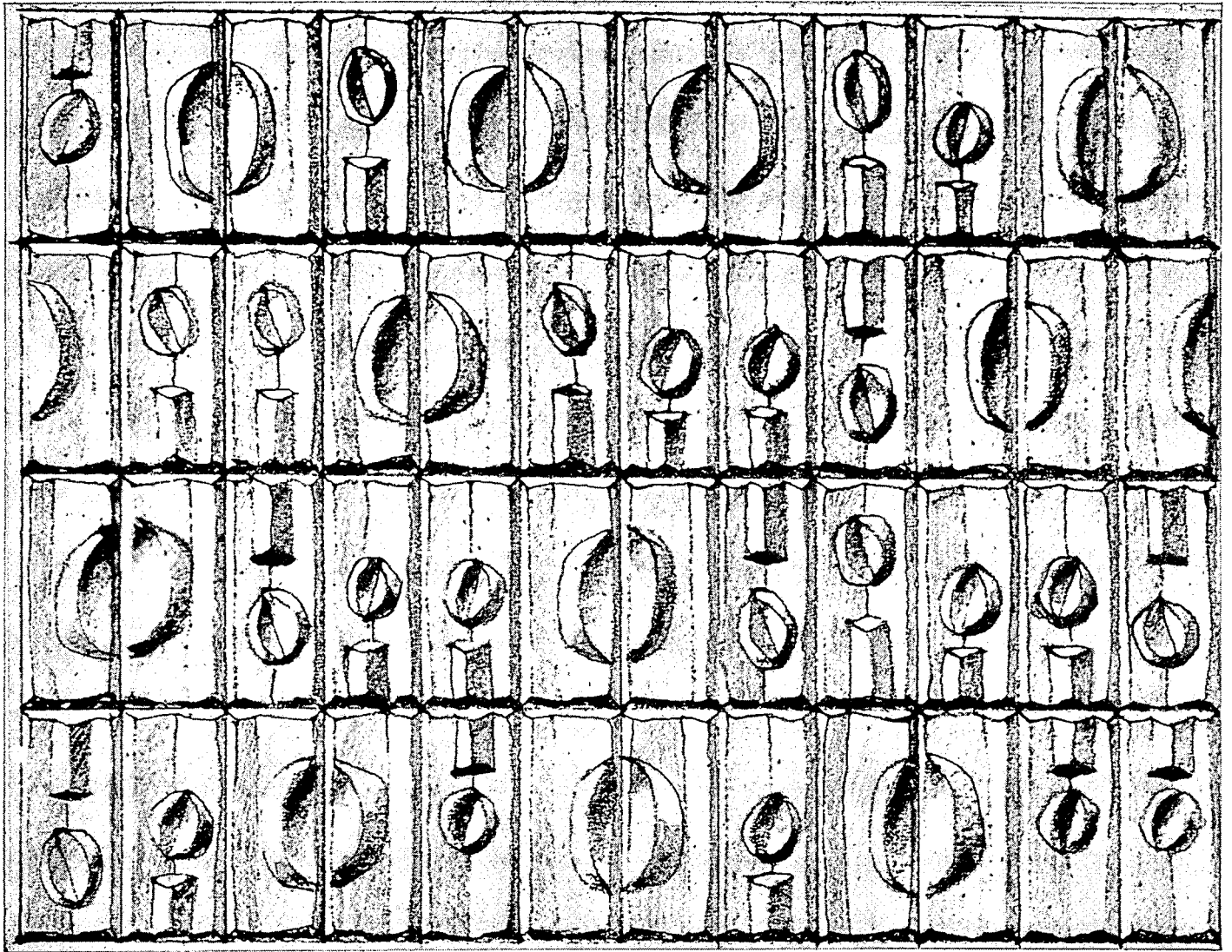
Terrazzo floor (below) of Commercial National Bank in Shreveport, Louisiana, is in pattern of black, gray, and white. William B. Wiener, Architect.



Design for a free-standing exterior wall (above), for a public school in Shreveport, uses black and white structural glazed tiles inserted in sand-colored brick wall. Samuel G. Wiener, Architect.

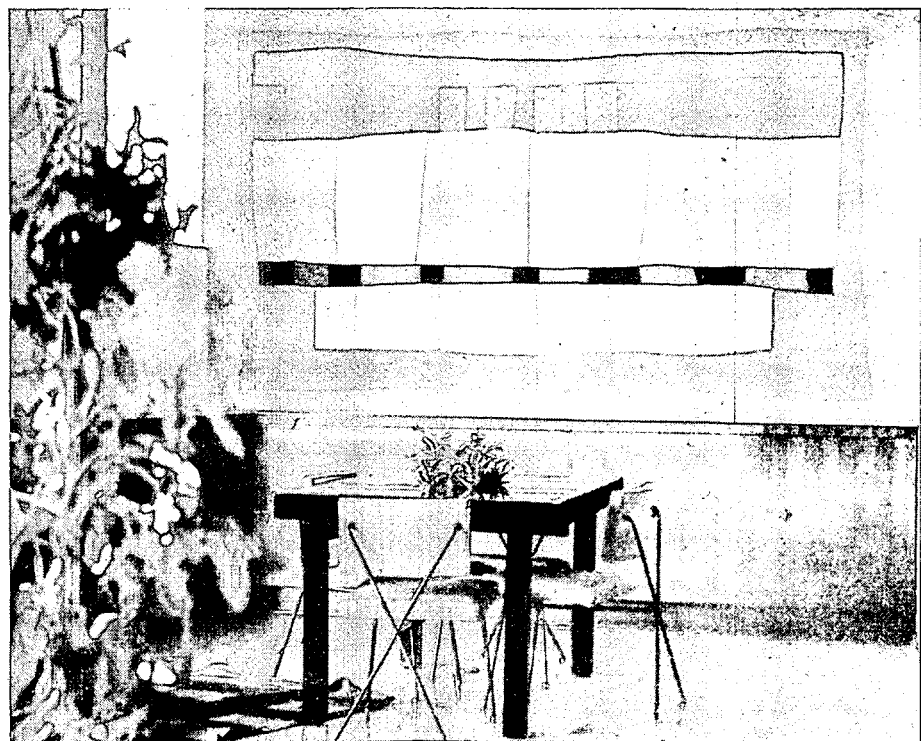
Tower (right), designed to support lights for a Shreveport shopping center, was transformed into a daytime attraction by brightly colored porcelain enamel panels. Samuel G. Wiener and William B. Wiener, Architects.





Glazed terra-cotta relief tiles (drawing above) are designed to add texture to façade while maintaining rectangular quality of spandrel. Four different tiles, each approximately 1'x2'-6", form a varied pattern in the 8' spandrels. For Post Graduate Medical School, Louisiana State University, Shreveport. Samuel G. Wiener, Architect.

Mural (right) was painted directly on wall in oils. Colors are whites, grays, yellows, blues, and greens. Emile Cahn residence, New Orleans: Samuel G. Wiener, Architect.



Owing to the relative isolation of the far western regions of Canada, the authors of this article, PETER AND CORNELIA OBERLANDER, feel that architects, engineers, and artists have worked together more closely there than elsewhere, and that an architecture is emerging whose progress deserves watching. The Oberlanders have lived in Vancouver for a number of years and are presently practicing in the field of architecture, she as landscape architect, he as townplanner for one of the "new towns" and as Head of the Graduate Course in Community and Regional Planning, Faculty of Graduate Studies, University of British Columbia.

the spirit of architecture in the Canadian Northwest

British Columbia is Canada's Pacific Northwest Region and covers an area of more than a third of a million square miles. By area, it is Canada's third largest province and is more than twice the size of California. It is a region of great contrasts, with almost 40% of its territory covered by forests and only 5% arable. More than half of British Columbia is rocky and barren, some in Alpine meadows, snowfields, and glaciers; its highest mountains reach beyond 15,000 feet, and within the boundaries of the province one finds a great variety of climates, natural resources, and landscape. The latter ranges from wet and rainy coastal regions to desertlike conditions in the interior. Rainfall on the Coast in some places is in excess of 150 inches annually whereas only 100 or 150 miles inland, beyond the Coastal mountain range, the Okanagan Valley has less than 10 inches.

The natural resources of the province encompass a wide range of metals, woods, oil, and gas, as well as the traditional bounties of fishing and trapping. Lumber, fish, apples, hops, lead, zinc, and silver have traditionally been great export items for a province which can boast the largest single pulp and paper mill in the world, at Powell River, as well as the largest integrated mining and metallurgical operation in Trail.

Recent discoveries of nearly limitless oil and natural-gas resources in the province's Peace River region have only just been tapped. The first major gas and oil lines are currently being completed and

will bring their treasures to markets in B. C. and the Pacific Northwest generally.

British Columbia is a young province. Just over a century ago, under the Oregon Treaty of 1846, the boundary was established between British Columbia and the United States. In 1871, British Columbia entered the Confederation of Canada; 15 years later the Canadian Pacific Railway was completed to the Pacific Coast, binding British Columbia to the rest of the Dominion.

Population growth has been rapid since then. Due to its early origin as a British Crown Colony and its mild climate, at least along the Coast, settlers of British stock predominate. Vancouver and, particularly, Victoria have always attracted people from England, Scotland, and Wales; in many ways the atmosphere of the old world has lingered on Canada's West Coast longer than elsewhere across the country.

Significant aspects of B. C.'s population are its points of concentration and lack of wide distribution. Eighty percent of the million and a third people of the province live within the metropolitan areas of Victoria and Vancouver, and in the settlements along a hundred-mile strip paralleling the U. S. border. Consequently, the buildings reflecting recent developments in British Columbia are most readily found in these areas. Here are a high concentration of population, means of production, and ideas of self-expression, especially as they relate to the Architects and their designs. There

are more than 250 registered Architects at present in British Columbia—nearly a 100% increase in professional registration since World War II. Where, in all this rapid and technologically astounding development during the past decade, stands B. C.'s architecture? To what extent does its architecture reflect the tremendous economic and social changes that have taken place or are currently in progress?

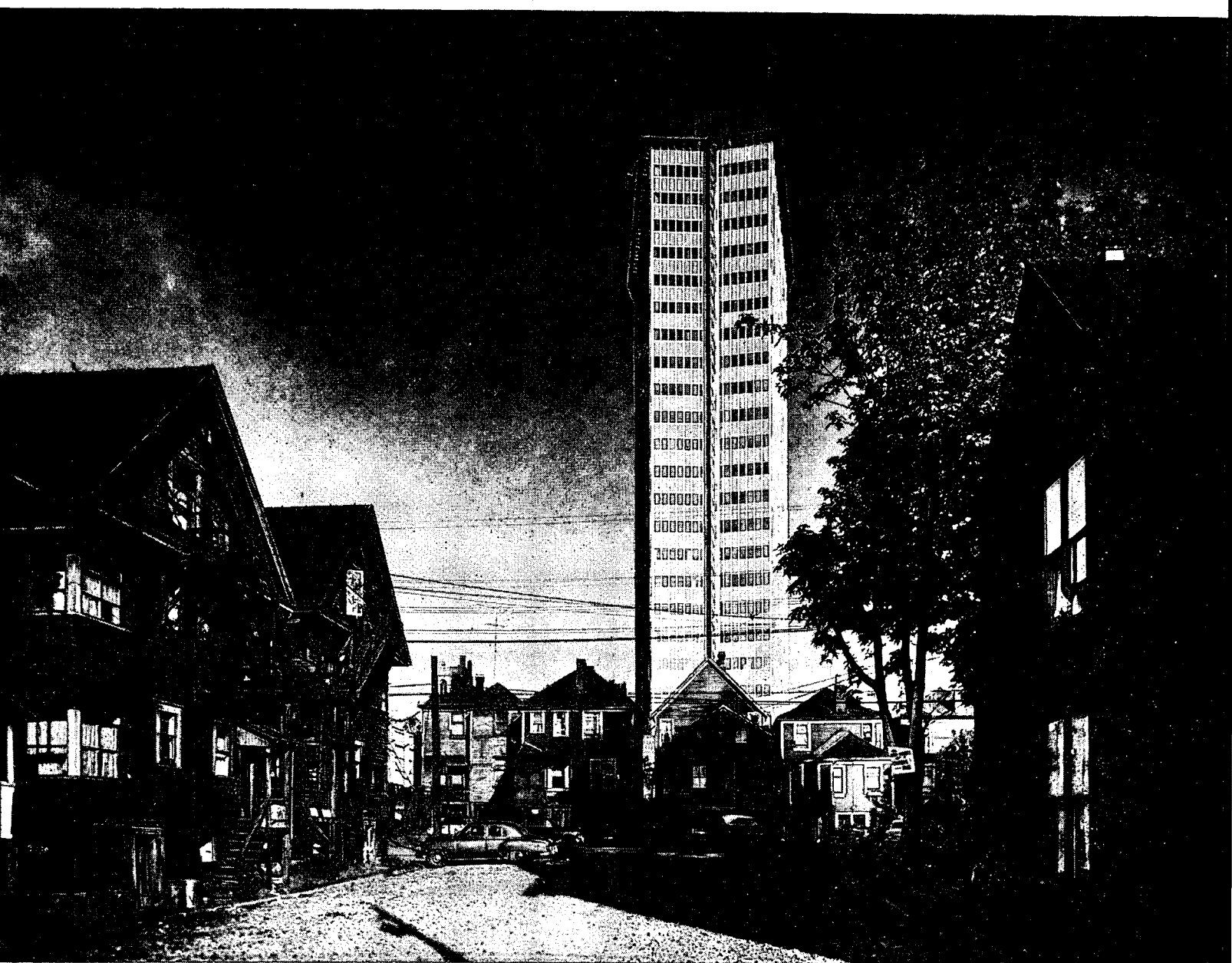
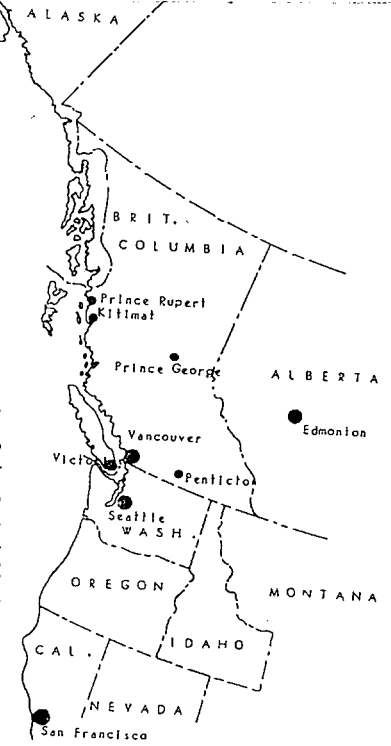
The widely known and unprecedented economic developments in B. C. have produced a vast quantity of buildings. This sheer volume of construction has enabled some architects to experiment with ideas, concepts of design, and materials and techniques of construction. History has shown that when architects are involved in a vast production of buildings such as we have just witnessed in B. C., out of the sheer quantity some quality emerges; and these buildings become pace-setters for the new forms and ideals in architecture.

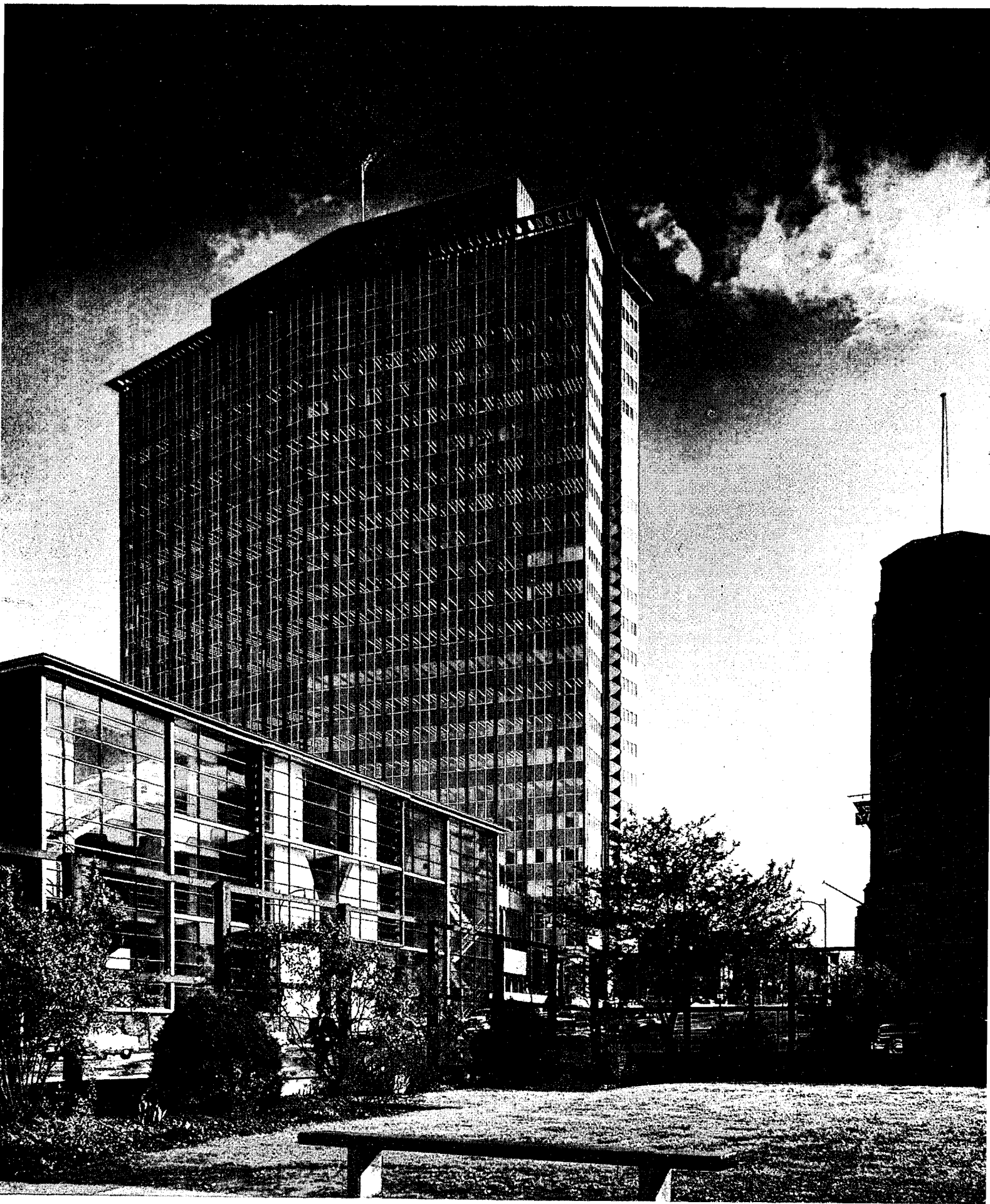
British Columbia has often been considered Canada's California, due to some similarity in climate and spectacular landscape. In that sense, buildings in British Columbia have often reflected architectural trends in California—particularly single family houses in their setting. It is important, then, to turn toward nonresidential buildings and examine their contributions to the gradual evolution of an architectural language characteristic, or at least descriptive, of British Columbia. In addition, the vast



B. C. Electric Company Office Building, Vancouver: Thompson, Berwick & Pratt, Architects; Otto Safir, Structural Engineers; Fred Severud, Engineering Consultant; T. W. Thomson, Mechanical Engineers; M. Thomas, Electrical Engineers; B. C. Binning, Collaborating Artist; Knoll Planning Unit, Furniture.

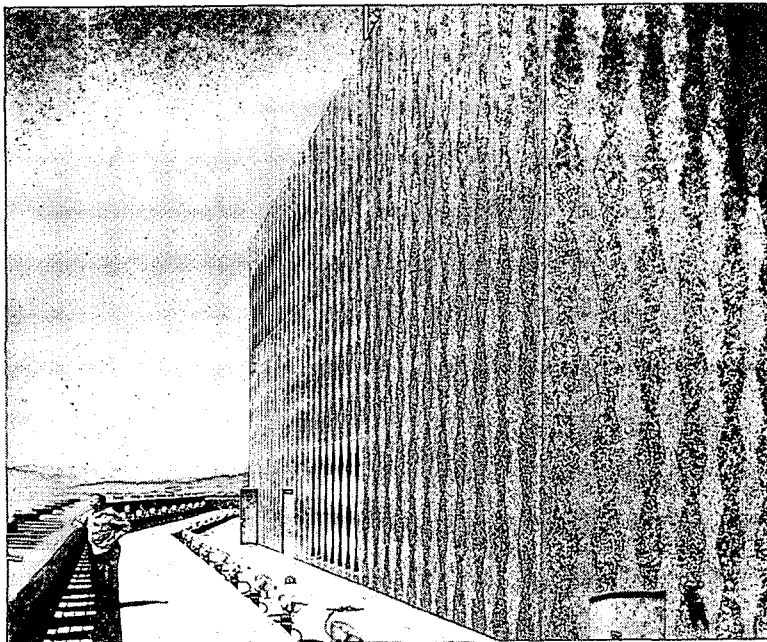
Photos (except as noted):
Graham Warrington







B. C. Electric Company Office Building, Vancouver (below, acrosspage, and opening page). Burrard Office Building, Vancouver (left): C. B. K. Van Norman & Associates, Architects-Engineers.



economic changes that have taken place are most readily reflected in buildings of commerce and industry, where architects often enjoy a freer hand, unfettered by precedents, esthetic preconceptions, or romantic aspirations.

Vancouver's skyline has undergone some spectacular changes during the last three or four years—due to at least three new office buildings and one block of apartments. The Head Office Building of the **B. C. Electric Company**, located on one of the high points of the downtown area, dominates the central skyline. A considerable achievement in solving functional office requirements, it is Vancouver's first example of design synthesis. The curtain wall and its architectural expression have been combined with a sensitive use of tile mosaic to lend the vast building an appropriate scale.

An example of comprehensive design, it provided an opportunity for the Architects to serve the client fully by having complete control over the design of the building, including the design of furniture and equipment. Furthermore, it provided an occasion where a single-minded client, together with an energetic and sensitive architect, was able to enlist the skills of a painter, interior designers, and craftsmen to produce an integrated whole. As a commercial building, it has established a high benchmark of achievement for architectural form and design through collaboration among artists in B. C.

The new **Burrard Office Building**, a short distance from the B. C. Electric Building, affords a good study in contrasts in design and concept; whereas the B. C. Electric Building is reinforced concrete, the Burrard Building is steel. Both use curtain walls, but with vastly different results. The Burrard Building accommodates innumerable and separate offices, each with its own requirements, and, consequently, it was designed as an over-all framework within which individual tastes and designs were able to play their roles. Stores at street level, with offices above, make it a modern prototype of commercial building. It has a strong urban quality and contributes substantially to the downtown cityscape of the downtown area.

Along the same street is Vancouver's **Customs House (2)** which, designed by the same architect as the Burrard Building, represents an interesting example of architectural kinship. It is a combination warehouse and office building, serving the regional needs of the Customs and Excise Division of the Federal Government.

Georgia Towers (3), the tallest apartment building built to date, reaches 22 stories, and is oriented along a north-south axis. It provides a variety of small and medium-size apartments, all of them taking advantage of some aspects of the spectacular panorama of mountains, sea, and sky.

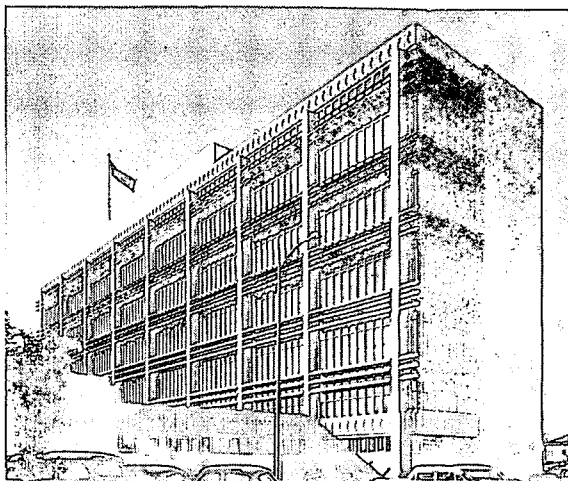
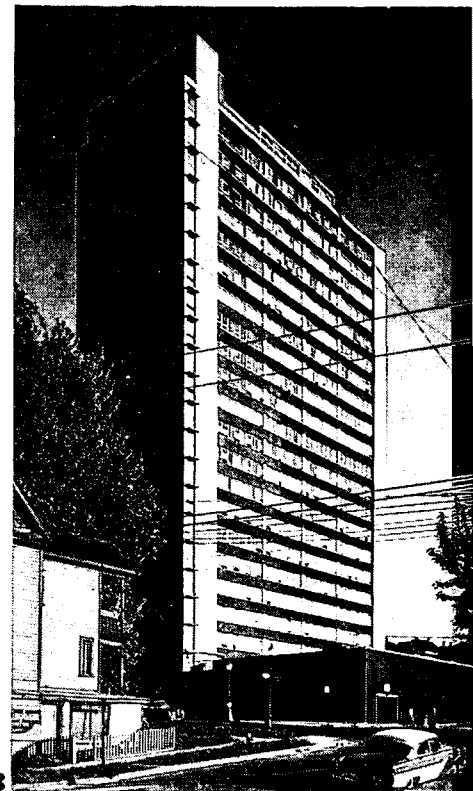
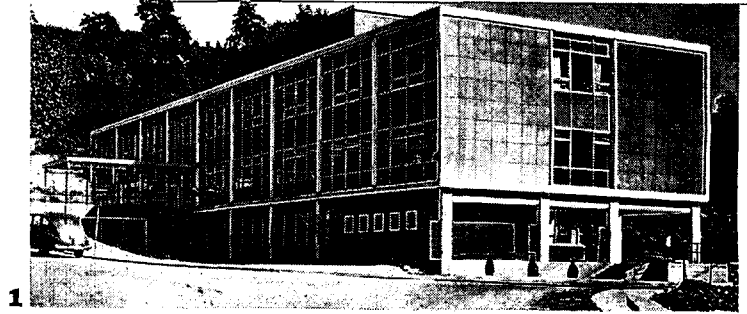
Buildings of a similar scale and impact on the skyline of a city can be found in **Victoria**.

Again, the **B. C. Electric Company (4)** built an office building to serve its requirements in that city. Here concrete was the structural material and the necessity of sun control was exploited for architectural purposes. The curtain wall has been reduced to an over-all grid pattern and aluminum shades running horizontally across the face of the building reveal the basic floor structure.

Office buildings elsewhere in the province are much smaller in size and seldom have the opportunity of affecting the over-all skyline to any degree.

The office building for the **Powell River Company (1)** in Powell River is a good example. In its setting in a small town of 10,000 people, it represents an advanced architectural form and vocabulary often restricted to the bigger cities. The use of the curtain wall has set the tone for office buildings throughout the province to the same degree that it seems to have become the common architectural grammar elsewhere in North America.

In the **Lovick Building (5 and 6)** the curtain wall seems to appear in its purest form. It is applied to a small office building with relentless logic in a convincing architectural manner. The curtain wall and its glazing, in the inner courtyard of the building, establishes an immediate and full integration of outside and inside space.



5

Powell River Company Office Building, Powell River (1): C. B. K. Van Norman & Associates, Architects-Engineers.

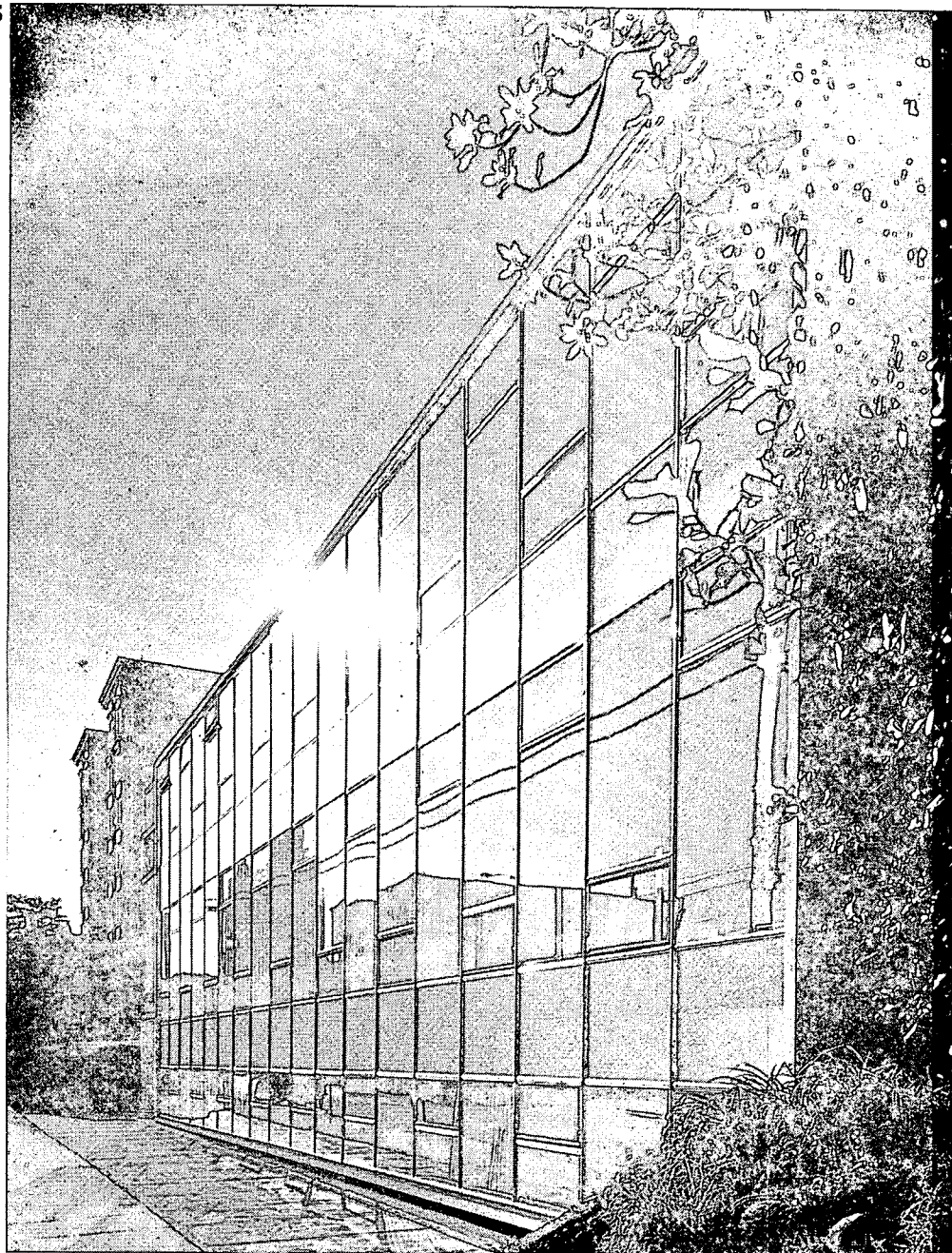
Customs House, Vancouver (2): C. B. K. Van Norman & Associates, Architects-Engineers; John H. Read, Consulting Structural Engineer; R. Lennox MacKenzie, Consulting Electrical Engineer; D. W. Thomson, Consulting Mechanical Engineer.

Georgia Towers, Vancouver (3): Thompson, Berwick & Pratt, Architects; Otto Safr, Consulting Engineer.

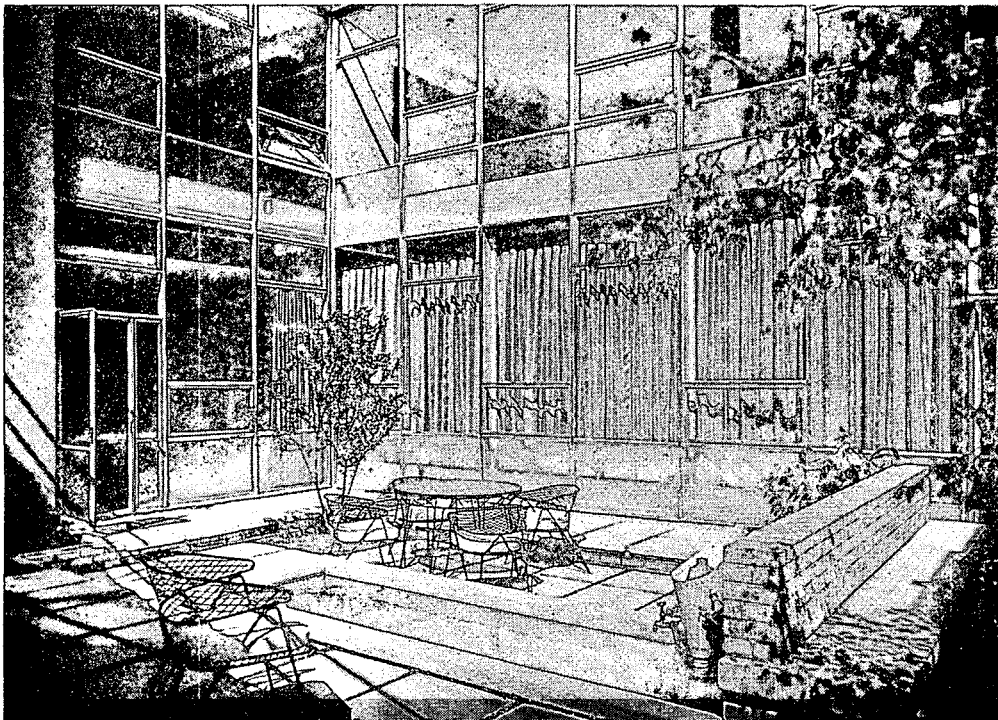
B. C. Electric Company Office Building, Victoria (4): Thompson, Berwick & Pratt, Architects; Otto Safr, Structural Engineer; Fred Severud, Engineering Consultant; T. W. Thomson, Mechanical Engineer; M. Thomas, Electrical Engineer; Orval Fisher, Muralist.

Lovick Building, Vancouver (5 and 6):

McKee & Gray, Architects; J. D. Nicol, Construction Engineer; Simpson & McGregor, Electrical Engineers; The Rankin Co., Ltd., Mechanical Engineers.



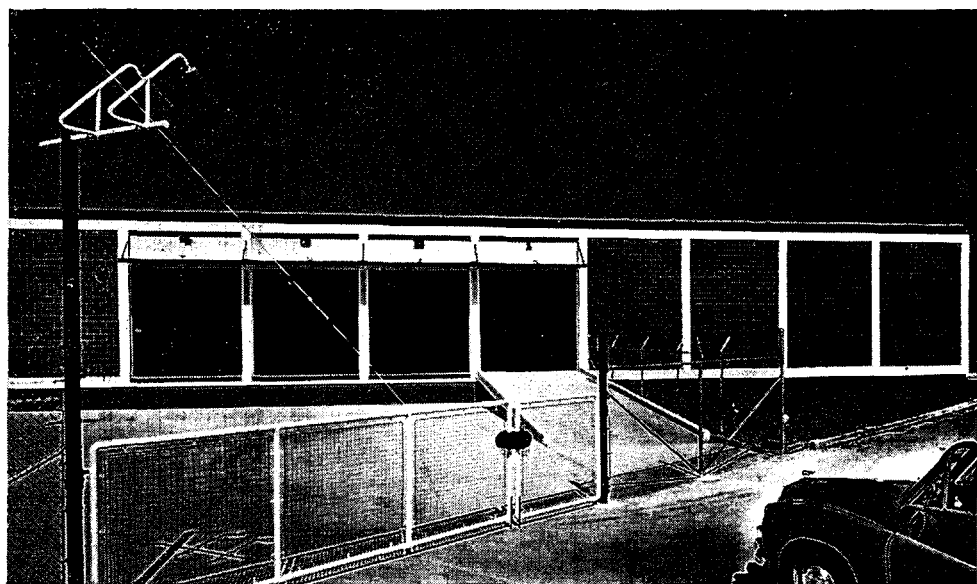
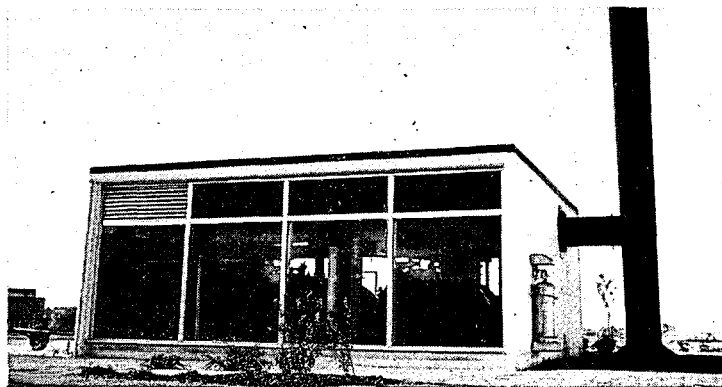
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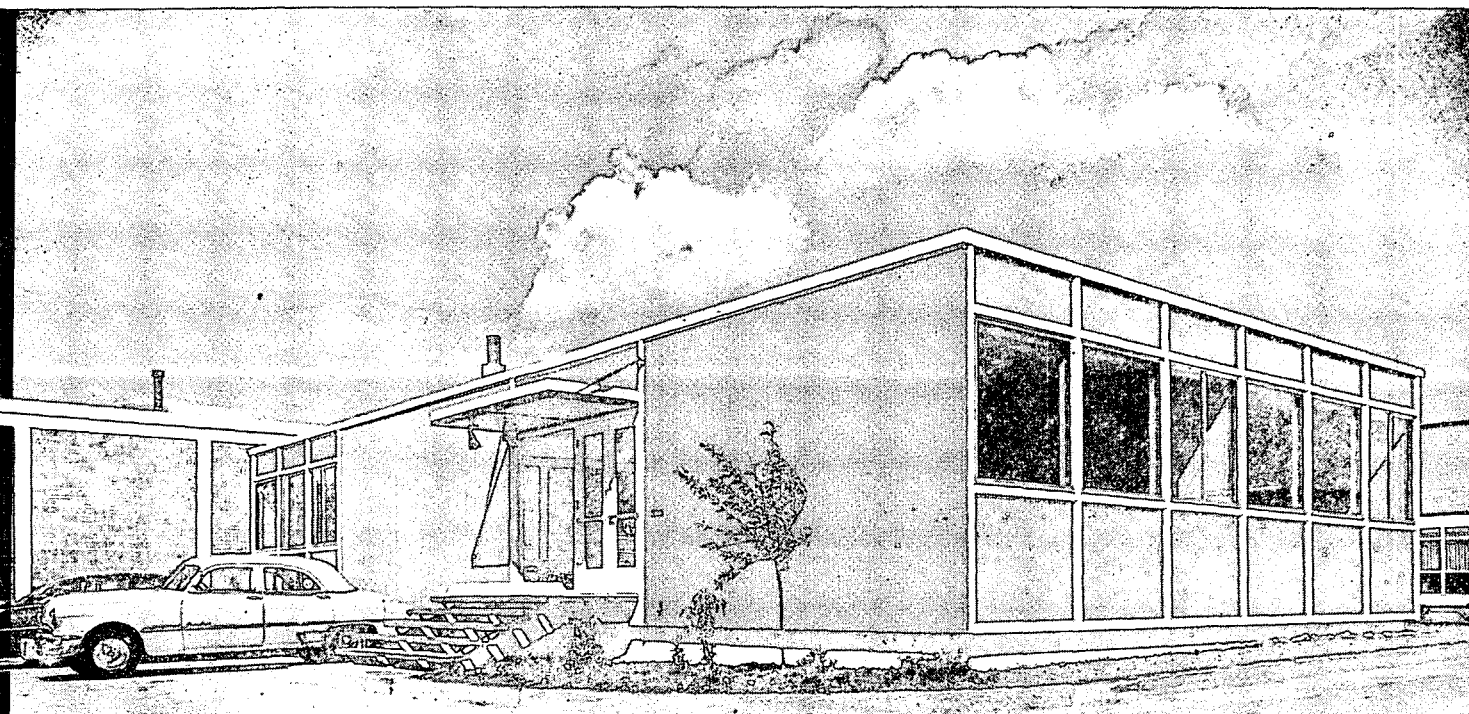
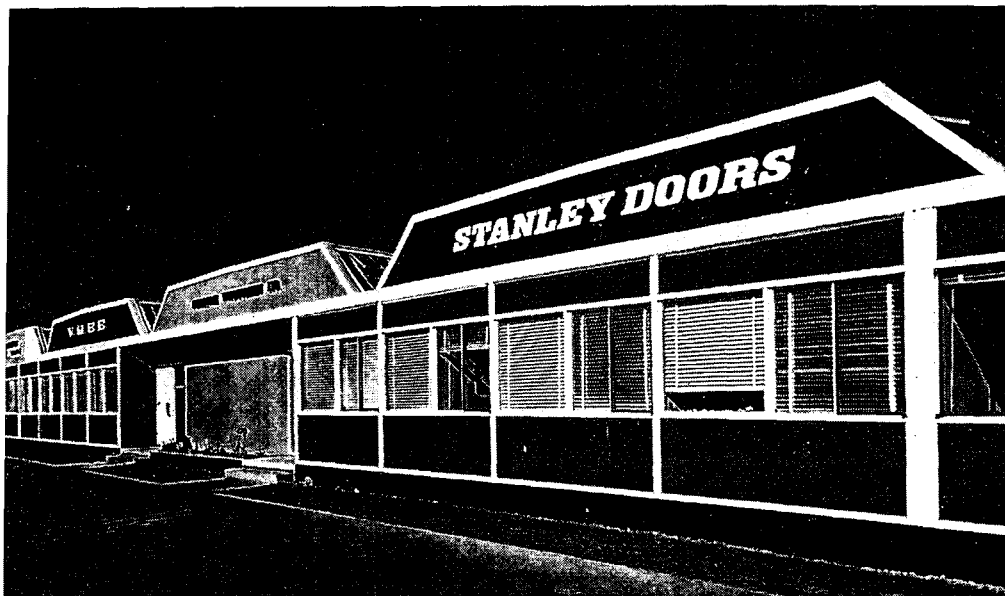
A special opportunity to develop a comprehensive architectural environment occurred when the **Grosvenor-Laing Industrial Estate** was planned and built. In 1951, the late Duke of Westminster chose Annacis Island, in the estuary-harbor of Fraser River, as site of the industrial estate. English planners, architects, and engineers produced the basic plan and detailed layout for the 1200-acre island; a causeway—with highway, railway, water, and gas connections—links it to the mainland.

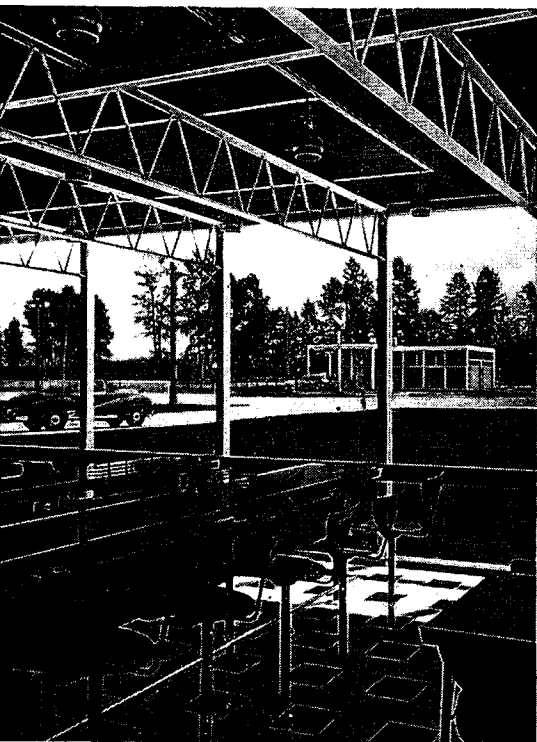
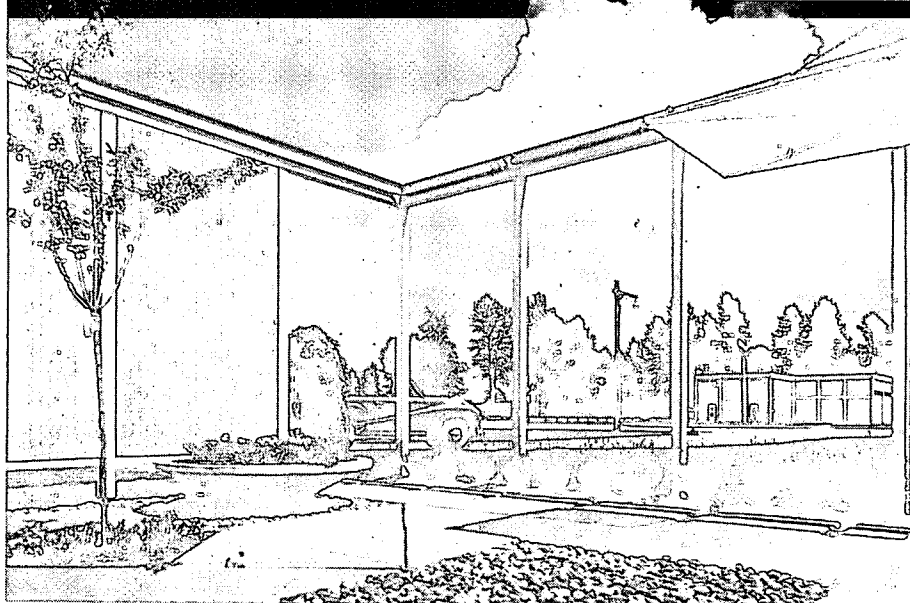
The main objective was to provide a large, fully serviced area with every modern convenience for warehousing, bulk breaking, and packing plants; processing and cold storage facilities; assembling, finishing, or complete manufacturing operations. The Industrial Estate, developed on a lease-hold basis, has attempted, with considerable success, to create a pleasant atmosphere conducive to high productivity and low labor turnover; it provides banks, cafes, gas stations, and related services for tenants and their employees.

Considerable effort has developed a consistent architectural appearance for all construction on the island. The Estate maintains its own architectural and planning staff which is responsible for the design and execution of all buildings and structures, including street furniture and landscaping. It builds factories for specific needs of future tenants; or leases land for firms to build their own buildings; or, as a third alternative, provides rental spaces in various unit sizes within a large structure for young companies or pilot and branch plants of firms who wish to test the market before committing themselves to a full-scale operation. These rental facilities, known as standard factories or warehouse space, are available for short-term leases in units of 6000 sq ft working space plus 700 sq ft of office space facing the main street. Annacis Island Estate shows the success achieved, under single land-ownership, by determined architectural designers who completely control the development of an area, from design of buildings to flower pots and details of landscape arrangement.



Grosvenor-Laing Industrial Estates, Annacis Island: Francis Donaldson, Architect; Heat & Power, Ltd., Consultants; M. A. Thomas, Electrical Engineer. Photos show central power house (top); garage and service yard (above); custom-built factory, warehouse, and assembly plant (acrosspage center); rental unit factory (acrosspage right); detail of rental unit factory (acrosspage top).



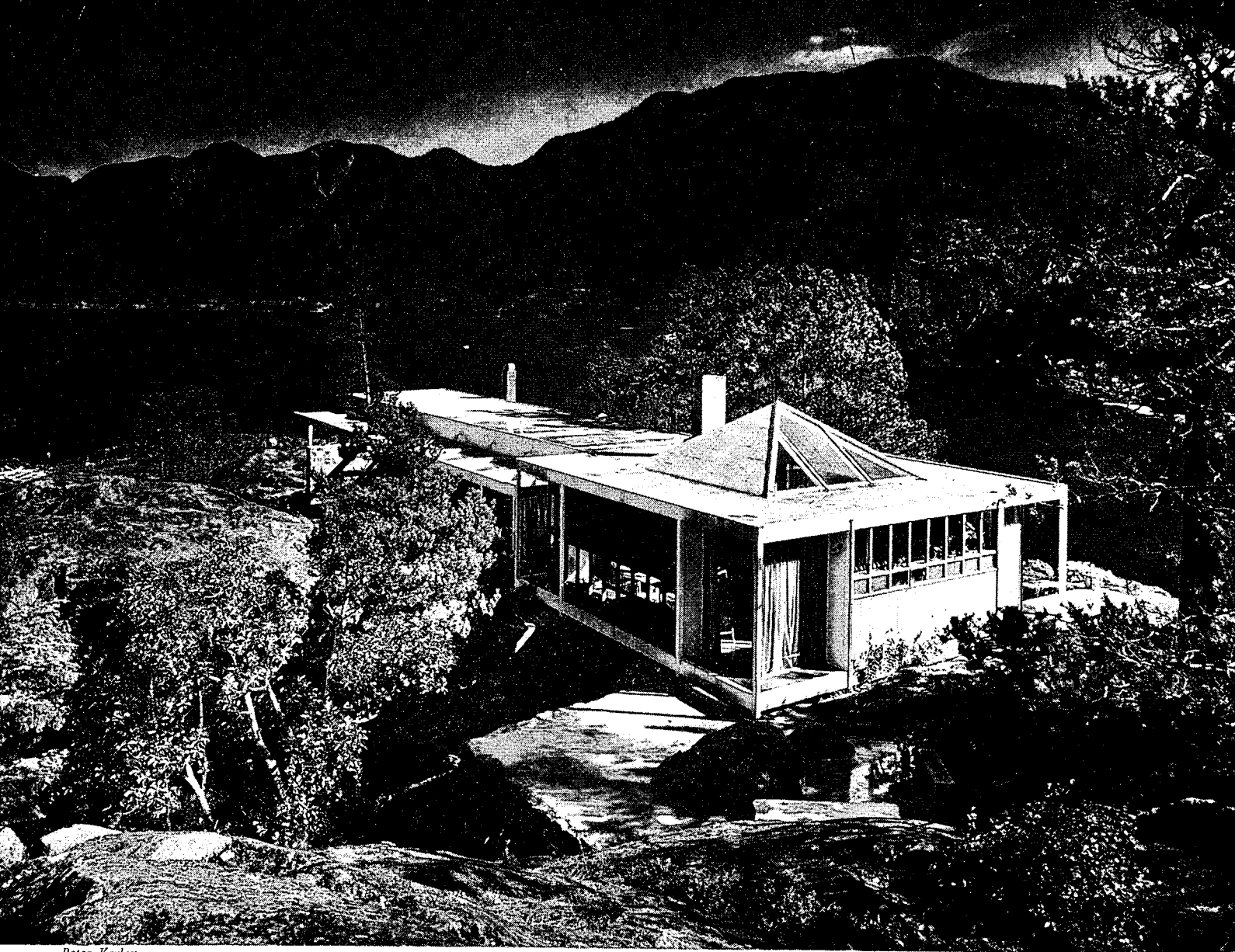


Grosvenor-Laing Industrial Estates, Annacis Island: Photos show restaurant forecourt with gas station in background (above); restaurant with custom-built factory in background (below); interior of restaurant with gas station in background (left).

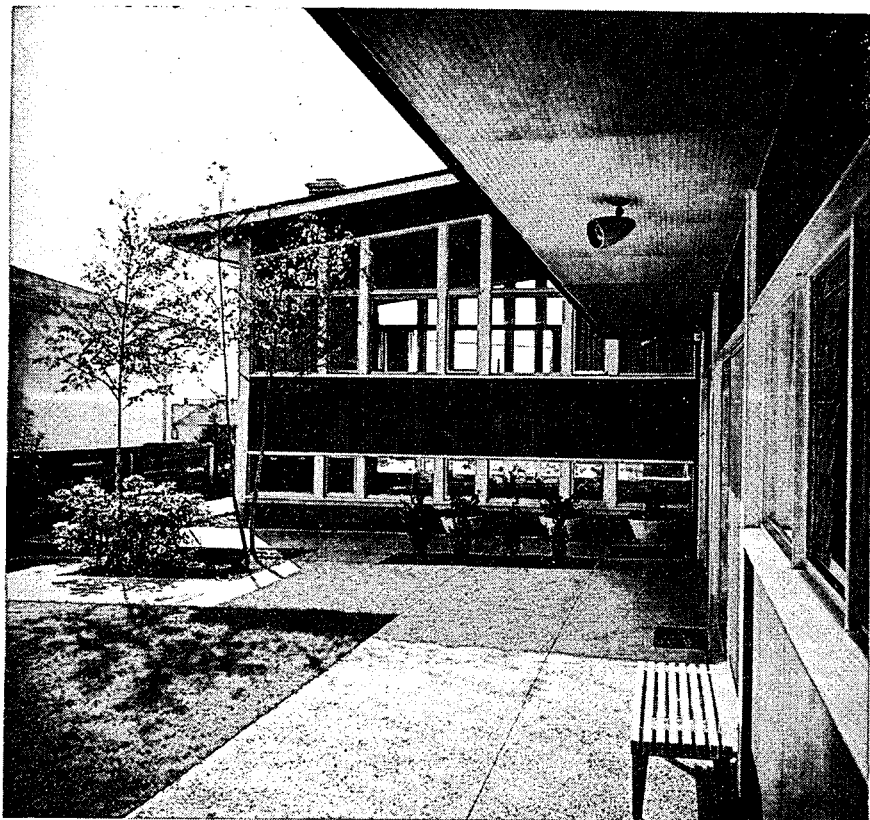
Massey Residence, West Vancouver (acrosspage right): Erickson & Massey, Architects.

Wong Residence, Vancouver (acrosspage below): Duncan McNabb & Associates, Architects; Harry Lee, Associate-in-Charge; Thorson & Thorson, Structural Engineers; Cornelia Hahn Oberlander, Landscape Architect.





Peter Varley



Architectural achievement in British Columbia has often been demonstrated by single-family houses built in dramatic settings. The **Massey Residence** is a good example of such a building; sitting as it does on a rugged rock outcropping, relating itself easily to the natural environment by its very contrast with it.

There are many examples—the **Wong Residence** is one—where sensitive and detailed landscape attention has been paid to a small site within a typical town lot.

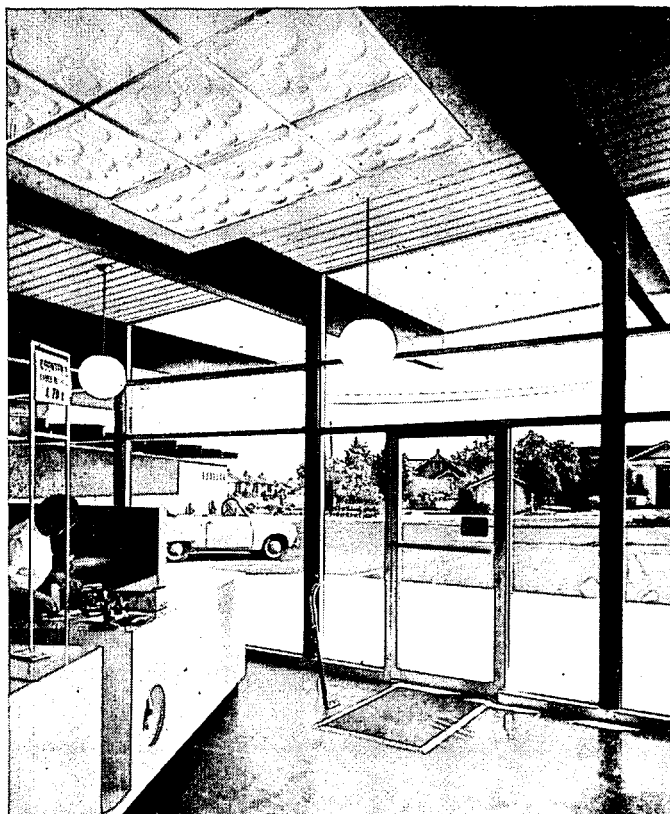
The large scale of the natural setting, within which so many buildings in British Columbia find themselves, threatens to dwarf them. This represents, if not an unique, at least a very critical challenge to the landscape designer and architect in choosing plant material, and in deciding on its relationship to the building and the outdoor functional spaces.

A variety of other buildings is included in this survey to indicate the considerable range of architectural design in British Columbia. In some ways, these buildings reflect the achievements of individual architects; and considered together they begin to form an interesting, and, in some instances, an exciting fabric of contemporary design. Some of the buildings are straightforward answers to specific needs such as schools or office buildings, banks, or churches, and in that respect are not markedly different from comparable work produced elsewhere in North America today. British Columbia, by its geographic location, has tended to think of itself as isolated, and in that context the development of a varied but completely contemporary architectural language as expressed in current buildings is of significance. There is some evidence that a sort of isolation, or at least separation, from the main stream of esthetic and technological development of contemporary architecture has produced one or two tentative results of its own.

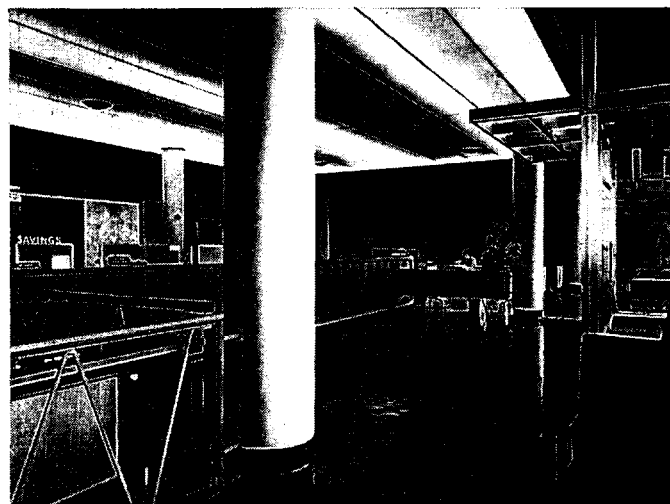
One of them seems to be a rapidly growing and earnest collaboration between architects and artists in the development of a meaningful synthesis of the arts in architecture. Murals of various sizes and in different media have become important attributes of most large buildings in British Columbia. Although this art form strongly tends toward abstraction, consistent and strong attempts have been made to have this abstraction grow out of regional experiences and natural forms related to the buildings and their setting.

Vancouver's central **Public Library**, when completed, will have a rather ingenious sculpture, as indicated by the photographs of the model mock-up. These runic forms, excuted in bronze, correspond to the symbols used in the mural inside above the circulation desk. The sculpture will present varying images during the day and night; the relationships between the individual forms will be important during daylight and electric lights from behind each object will emphasize their respective silhouettes during the night.

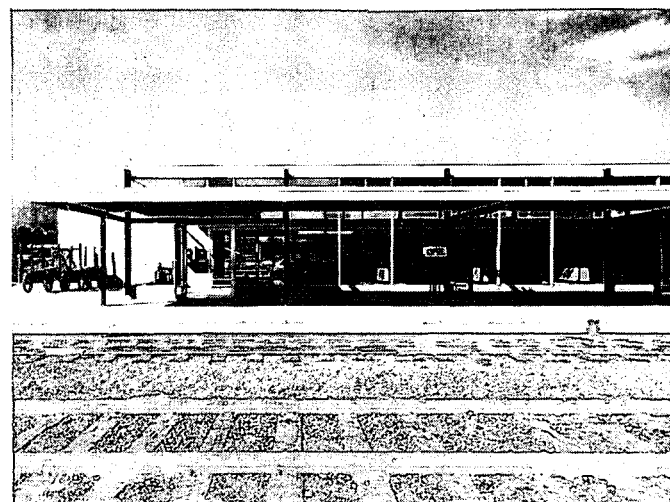
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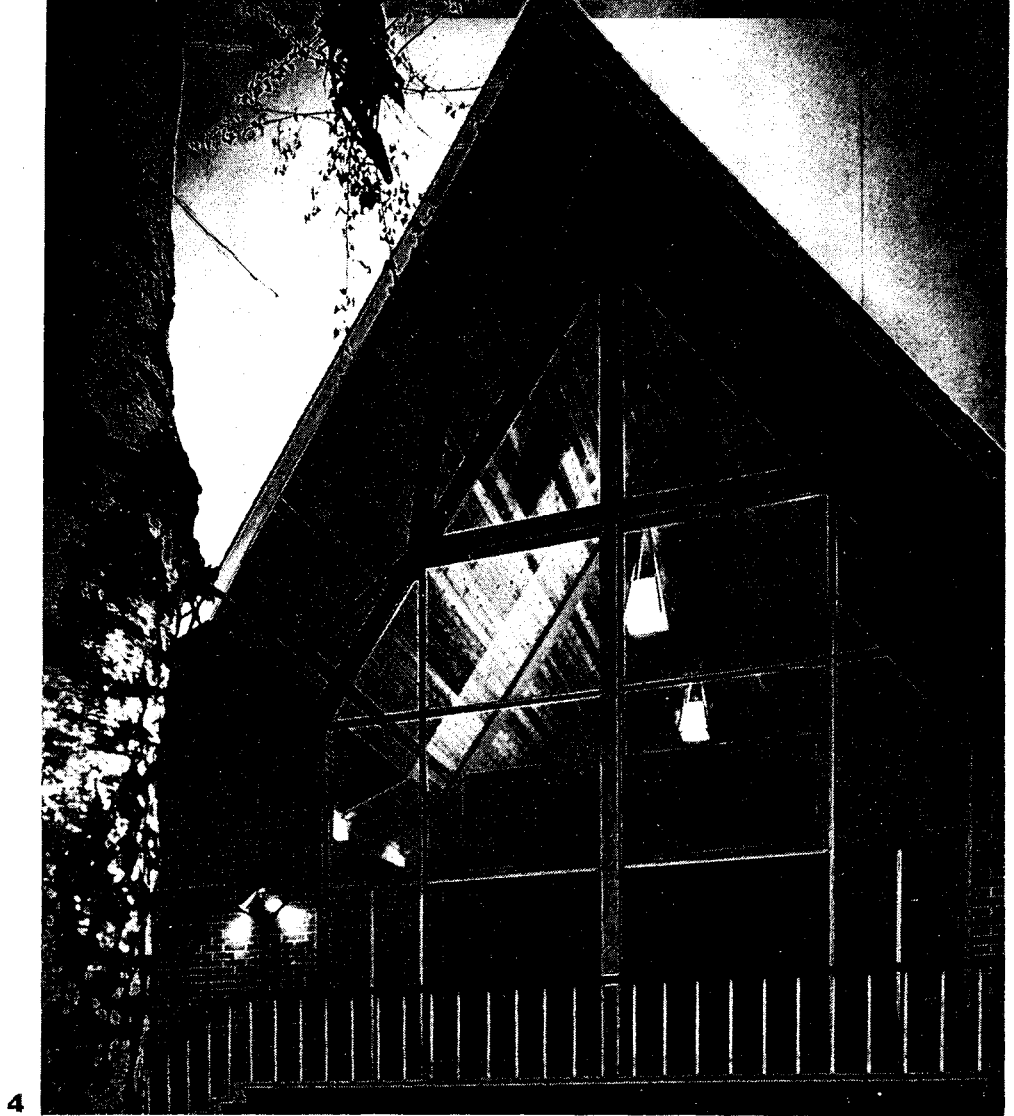


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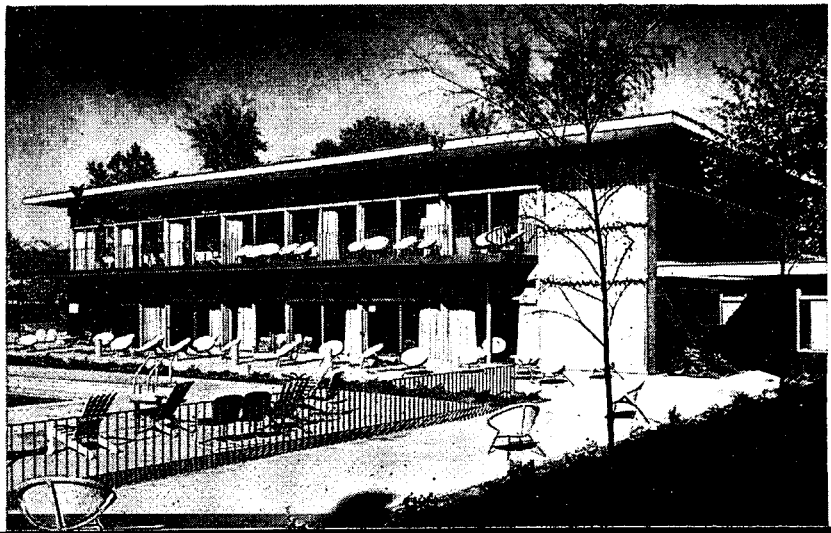
Selwyn Pullan



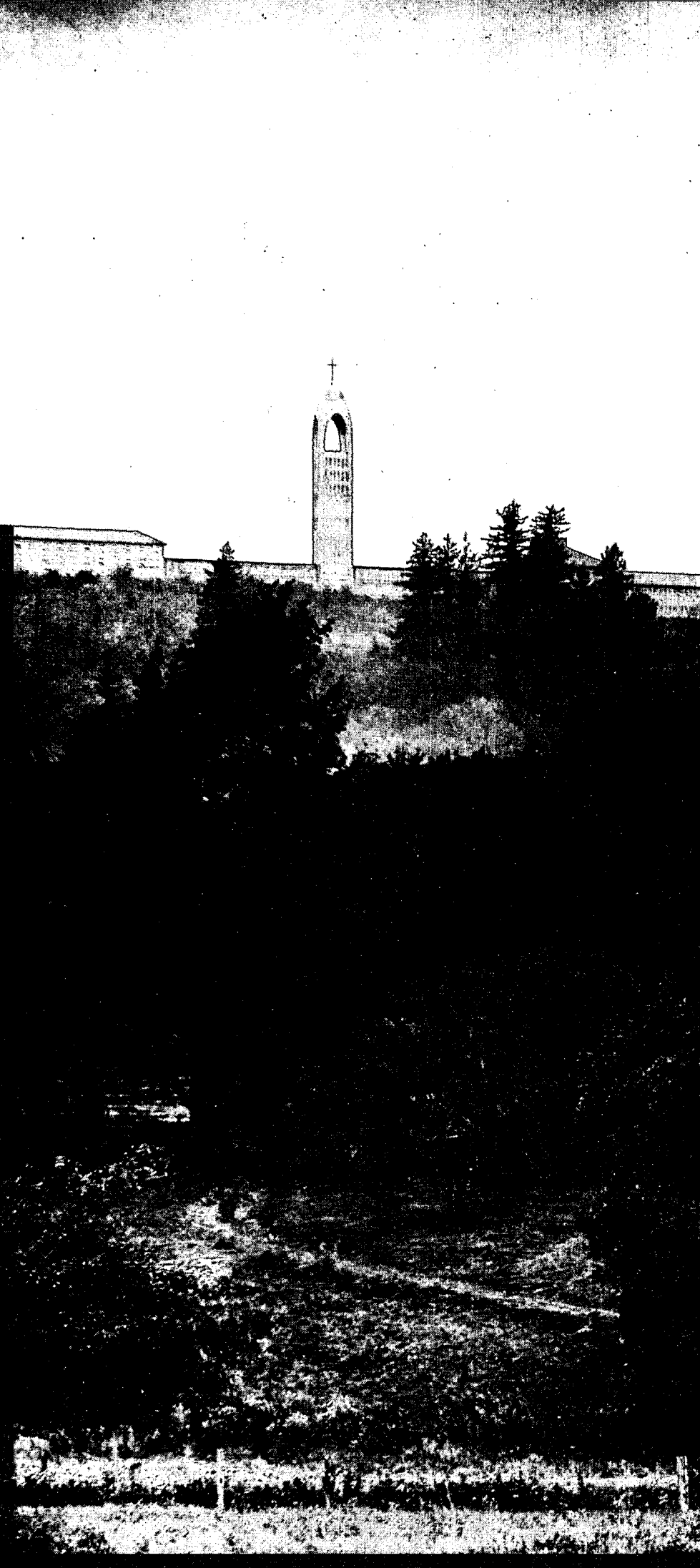
Selwyn Pullan

5

*Drive-In Laundry (1): Davison & Porter, Architects.
National Trust Company Building (2): McCarter, Nairne & Partners, Architects; D. W. Thomson, Mechanical Engineer; Simpson & McGregor, Electrical Engineers.
Pacific Great Eastern Railway Station, North Vancouver (3): Hale & Harrison, Architects; A. H. Couser, Structural Engineer; D. W. Thomson, Mechanical Engineer; Simpson & McGregor, Electrical Engineers.
Church of St. John the Apostle, Vancouver (4): Toby & Russell, Architects.
Central Public Library, Vancouver (5): Lionel Thomas, Sculpture.
Vancouver Lawn & Tennis Club, Vancouver (6): Davison & Porter, Architects; Read, Jones & Christoffersen, Structural Engineers.*



6



In an architectural sense, the slender concrete tower (*left*) of **Westminster Abbey and Seminary of Christ the King**, at Mission City, successfully relates to its immediate site and landscape environment. It dominates the space before it with distinction and seems to enhance the natural landscape forms, again, by its contrast with them.

In summary, the range of buildings presented indicates a wide variety of architectural forms and solutions to well known building problems. The spirit of Canadian Northwest Architecture, however, is emerging through a remarkable unity within this variety. A very pleasant climate and an heroic landscape, together with some enlightened clients, have presented many of the young architects with unique opportunities of developing quickly professionally, and contributing in small, and some big ways, toward a slowly emerging consistent architecture.

Owners of the Westminster Abbey and Seminary of Christ the King are monks of the Benedictine Order; Gardiner, Thornton, Gathe & Associates, Architects; Read, Jones & Christoffersen, Structural Engineers.

PROGRESSIVE ARCHITECTURE IN AMERICA

STORE FOR E. V. HAUGHWOUT & COMPANY—1857

New York, New York

J. P. Gaynor, Architect

The Architectural Iron Works of New York, Builder





The Broadway of 100 years ago was not only New York's most important artery but also, according to contemporary visitors' accounts, one of the great boulevards of the world. The quiet street where casually rooting pigs had surprised strangers 30 years before, had become a busy promenade of fashionable brilliance, of high style and high life, centered in the city's grandest hotels and most popular stores. While white omnibuses rattled by in heavy traffic, elegant dandies loitered in front of the new St. Nicholas Hotel and the famous Astor House, and ladies of the *haut-* and *demi-monde* in gigantic crinolines swept unwary gentlemen off the curb in the hectic shopping hours of the afternoon. The glamour of Broadway soon put older European cities to shame. Charles Mackay, recording his impressions in *Life and Liberty in America, or Sketches of a Tour in the United States and Canada in 1857-58*, noted Broadway's extraordinary "beauty, extent, life, bustle and wealth," and concluded, in a dazzling confusion of comparisons, that "... no street in London ... can be declared superior, even equal, all things considered, to Broadway. ... It is longer, more crowded and fuller of fine buildings than the Boulevard des Italiens; it is as bustling as Cheapside; and more than all, it has a sky above it as bright as the sky of Venice. Its aspect is thoroughly Parisian. ... " Architecturally, it must have been dazzling. The avenue that Mackay saw, from Trinity Church to Union Square, was a "grand succession of commercial palaces" of granite, brownstone, costly white marble, and a new material just coming into favor—cast iron. Conspicuous among the edifices that gave "its most imposing character to this busy and beautiful street," he remarked a particularly handsome building "... the iron palace of Messrs. Haughwout and Company."

Of all the important structures "in Broadway" at that date, the five-story Haughwout Store was the last word in architectural design. Not only was it completely fronted with the miraculous new building material of the mid-19th Century—cast iron—but also these impressive metal façades were in the most elegant avant-garde style of the day—the Venetian Renaissance. Most remarkable of all, the building incorporated a wonderful new device, the safety elevator; the first practical passenger lift in New York, and possibly in America. The Haughwout Store's iron elegance contained all the seeds of the future: its metal façade was to lead, in turn, to the metal frame; the elevator, combined with the metal frame, was to produce the skyscraper; and its repetitive Palladian rhythms were to become the basis of today's esthetic of prefabricated, mass-produced, structural units.

According to entries in the original notebooks and account books of Elisha Graves Otis, the Haughwout passenger elevator was shipped on March 23, 1857, and completed on April 6. It was a Number 1 lifting power, duty 1000 pounds and 40 feet per minute, and it cost \$300. Charles R. Otis, Elisha's son, noted in his reminiscences (1911) that he had worked on the passenger elevator for "E. V. Haughwout and Company, dealers in French china and glassware. ... The car of this machine was enclosed and provided with safety appliances." This safety system, invented in the early 50's by Otis and used for freight lifts until 1857, was patented in 1861, four years after its installation for passenger use in the Haughwout Store. Chief among the safety devices was a spring release that operated automatically if the rope broke, securing the car in a series of ratchet platforms in the sides of the shaft. Although mechanical hoists had been used since time immemorial, it

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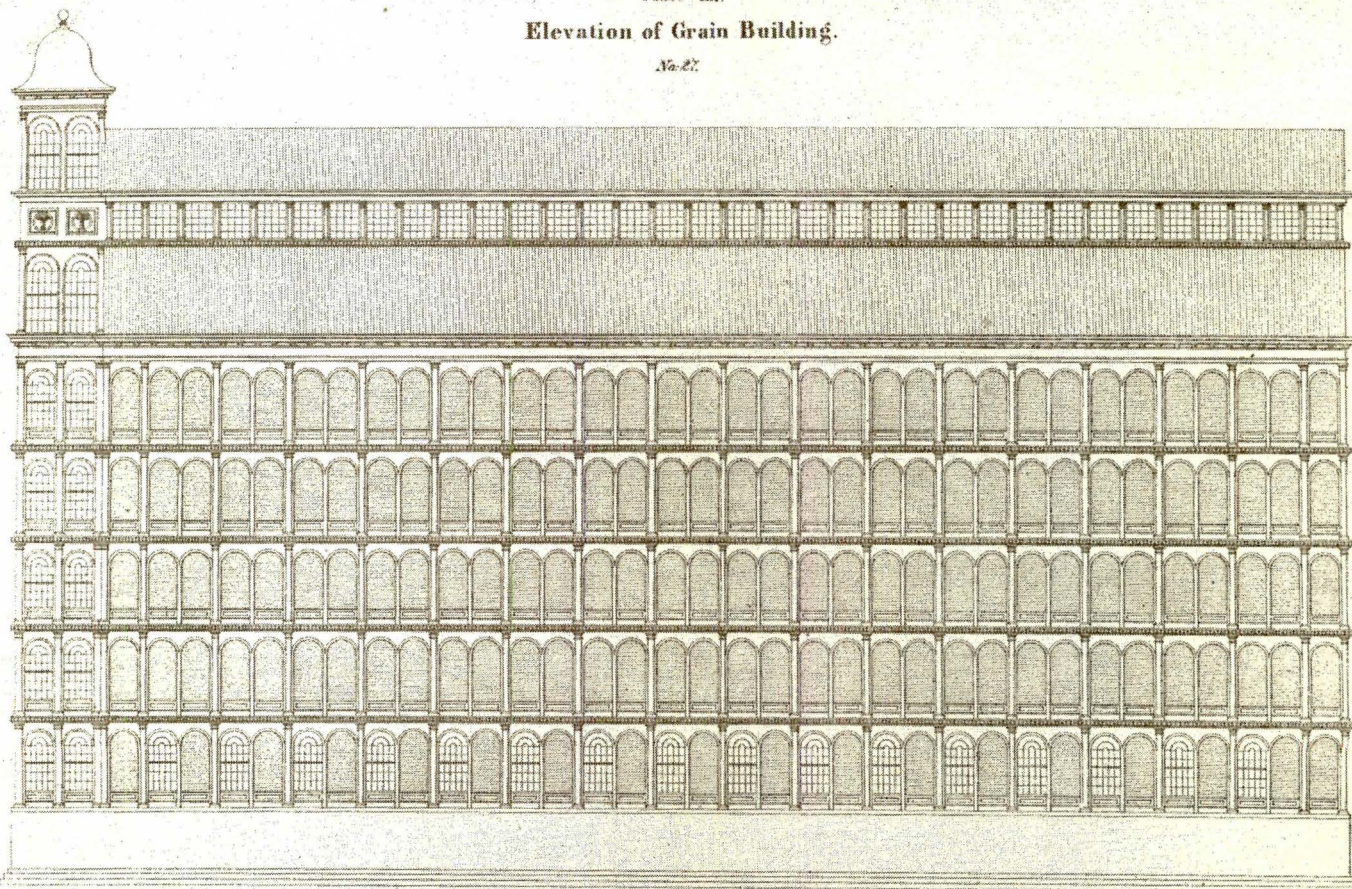
New York
N. E. C. Y.
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Harper's Weekly



Elevation of Grain Building.

No. 27.



Edw. of Saxony, Mayor & Knapp, 44 Broadway, N.Y.

ARCHITECTURAL IRON WORKS, NEW-YORK

was Otis' invention and commercial promotion of his safety system that eventually brought the passenger elevator into common use. A feature article in *The Architects' and Mechanics' Journal* (December 10, 1859) pointed out the success of this initial installation and a more recent one in the Fifth Avenue Hotel—urging greater use of the new device. By the 70's the passenger elevator had become an accepted part of new construction, marking the real beginning of the high-rise building.

Although the Haughwout Store was one of the most outstanding examples of the cast-iron palace in New York, it was not the first building of its type. As Turpin Bannister has pointed out, James Bogardus constructed the iron fronts of the Milhau and Laing stores in 1848 and 1849, and even these were probably preceded by earlier examples in the Middle West, as well as John Haviland's famous 1829-30 cast-iron bank façade in Pottsville, Pennsylvania. Not Bogardus, however, but Daniel Badger was the builder of the Haughwout Store. His firm, incorporated in 1856 as Architectural Iron Works of New York, gave increasingly successful competition to Bogardus in the rapidly growing field of iron architecture. The catalog of Architectural Iron Works, *Illustrations of Iron Architecture* (1865), contains many handsome renderings of proposed and executed designs by leading architects of the day.

The revolutionary advantages of metal construction, as listed by Badger in his publication, were "strength, lightness of structure, facility of erection, architectural beauty, and economy or cheapness." Concerning its greater strength, he stated, "The established superiority of Iron in this regard now requires no argument. We may safely affirm that no substance, available for building purposes, has such closeness

of texture, or is equally capable of resisting immense pressure." Stronger and lighter iron construction also opened up the building's façade: "A light and ornamental edifice of iron may be safely substituted for the cumbrous structures of other substances, and sufficient strength be secured without exclusion of light—which is often highly desirable for mercantile and mechanical purposes." As for its ease of erection: "Nearly all of the work of an iron structure can be previously prepared and fitted in the foundry and finishing departments, and these transferred to the place of erection and put together with rapidity and security. In some kinds of structures the facility of erection approaches the incredible." If, in the matter of architectural beauty, both Bogardus and Badger stressed the ease of casting elaborate ornamental forms, today we see the successful unity of mass-fabricated elements. The Haughwout Store's repeated horizontal bands of arched windows, separated by the vertical rhythms of sharply cast Corinthian columns, create an extraordinarily rich mechanical pattern of light and shade. Its architectural effect is as abstract as its forms are precise.

By some miracle, the Haughwout Store has escaped the destructive rush of progress and stands in calm, abandoned elegance at the corner of Broadway and Broome Street in New York. Badger's name can still be seen in the cast-iron doorstep. Even the coat of dingy black paint added by the somber Late Victorians fails to disguise the fact that this is one of the handsomest surviving examples of America's Iron Age.

ADA LOUISE HUXTABLE

Appreciation is expressed for generous assistance of The Museum of The City of New York and Otis Elevator Company; and for photographs contributed by W. Knight Sturges and Otis Elevator Company.

Total esthetic effect of many buildings has been sullied by inappropriate and oftentimes vulgar means of identification. Since identification is a requirement for most structures—certainly for commercial ones—this review of the many factors governing the selection of type faces, choice of material, and proper method of specification should have both interest and value.

building identification

by Ralph Stoetzel*

One of the most important details of any architectural project of a civic, commercial, or industrial nature is identification. Barring a few tasteless individuals who mount billboards on the lawn, most clients expect their architect to include in his elevation or perspective a definite area where the building can be identified.

The detail of identification is of utmost importance to the architect, because the entire impression of his work can be determined by such a simple thing as appropriateness of design of letters. It should be kept in mind, though, that the architect's or artist's design must be translated into a finished product. To do this with the quality of workmanship desired, highly skilled men with considerable technical "know-how" are needed. Permanence must also be considered carefully. Not only must the metal of the letters be of a suitable alloy, cast under scientifically controlled conditions, but fastening must be permanent. Rust streaks from fasteners reflect discredit on both building and architect.

Reputable manufacturers of metal letters, castings, and other means of identification will provide sample specifications which can be used; there is always, however, the matter of suggested "equals." These suggested equals must be studied most carefully before approval.

One of many factors which must be considered in selecting a source of metal letters for building identification is the nature of the firm offering to supply letters: Is this firm really in the business of designing, manufacturing, and supplying metal letters, or is this type of work

a sideline of a metal-working "job" shop? Extensiveness of the line—in terms of variety of type-faces, custom molding, and casting—is a principal criterion to use in evaluating a metal-letter manufacturer. The variety of type-faces must be given special consideration. Some shops will offer what appear to be several different type-faces, yet close inspection of literature or samples will show that only a half-dozen or so of the letters in each series are of different design—the bulk of the simpler letters may be the same in each of several type-faces. Use of such composite alphabets produces an inharmonious identification.

In addition to the extent and quality of the line, degree of service offered is another criterion to use in evaluation of a metal-letter manufacturer. Service includes: Willingness and ability to design a logo, special sign, or alphabet; ability to translate an architect's design into a satisfactory finished product; provision of spacing and mounting templates; willingness to assist in supervising the actual mounting of letters or erection of signs or logos.

There are optical factors which a skilled letter-designer always considers in making a mounting or spacing a template—the basic principal being to make the total space between letters approximately equal rather than making letters equi-distant, center to center. If a template shows the latter to be the case, the manufacturer is not doing first-class work. When letters, logos, and signs are designed, the matter of optical illusion must be taken into account.

The matter of an "equal" to whatever

is specified must be considered. Have letters or devices proposed as being equal been designed by someone who is skilled in design, application, and placement? Further, is the type-face or alphabet offered really the same as that specified, or is it a makeshift from a composite alphabet?

Most of the above factors relate directly to the appearance and esthetics of the completed identification. While esthetics is of major importance, permanence is vital. Permanence and long term satisfaction may be obtained for the client only by giving careful consideration to materials selected for the letters.

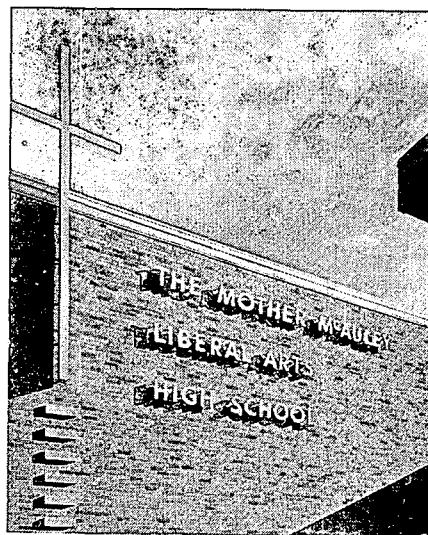
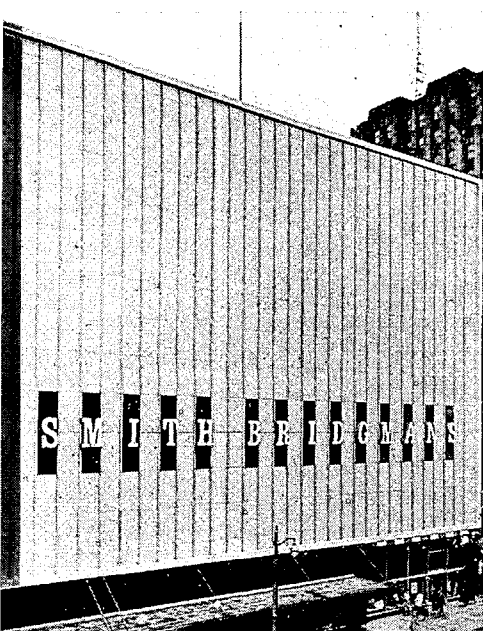
Background material, purpose of the message, indoor or outdoor location, and atmospheric conditions are factors which most affect selection of materials. Generally speaking, aluminum will be first choice for most raised letter applications—indoors or out. Aluminum has a pleasing sheen and appearance, together with a measure of warmth in its coloration. Both of these elements enhance legibility—a very important factor in all identification work. For inland areas where the atmosphere is not unduly influenced by salt air or chemicals from manufacturing plants, anodized aluminum will be quite satisfactory. In areas where salt air is a factor, special aluminum alloys—such as F214—should be used because of their corrosion resistance. In other problem locations a specific alloy can be selected, or even created if necessary.

If the letters are designed by the architect, which makes it necessary for the manufacturer to create special dies for

*Architect, Chicago, Ill.



Crooks Studio



Bill Engdahl: Hedrich-Blessing

Among the cardinal considerations affecting building identification are: selection of type faces, spacing of letters, sympathy for background material, effect of shadows, and proper use of fasteners. Specifications for lettering (above) failed to cover proper metal for fasteners.

the molding process, the cost will be approximately three times as much as letters selected from a supplier's stock alphabets. If this cost factor makes custom design in aluminum undesirable, stainless steel ought to be considered. At somewhat less cost, stainless steel can offer a greater range of freedom to the designer because it can be formed by a soldering process without the aid of molds.

If the use of stainless steel is considered, special thought must be given to the final placement of letters in relation to usual lighting conditions. Because of its reflective surface and strong high-lights, stainless steel has an undesirable tendency to appear black.

Heliarc welding, a relatively recent development in the metallurgical field, may make it possible to create custom designed letters from aluminum at a price comparable to that of custom letters of stainless steel. This process permits anodizing of aluminum without discoloration inherent in other welding processes.

Bronze is another metal that is frequently used for identification purposes—for logos and plaques as well as other ornamental applications. For metal let-

ters, bronze has a high degree of legibility and is considered very durable, if not actually permanent. Maintenance costs for bronze letters can be held down by using lacquer coatings which prevent darkening from oxidation. Coatings are easily replaceable and will last from six months to two years, depending on climate and exposure.

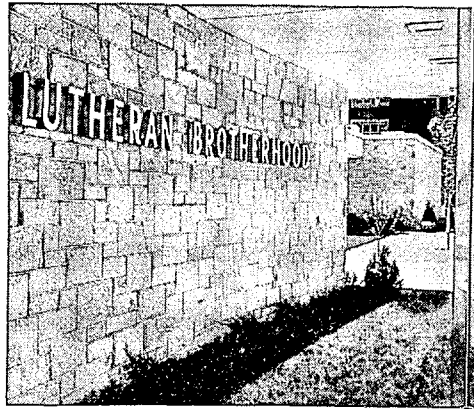
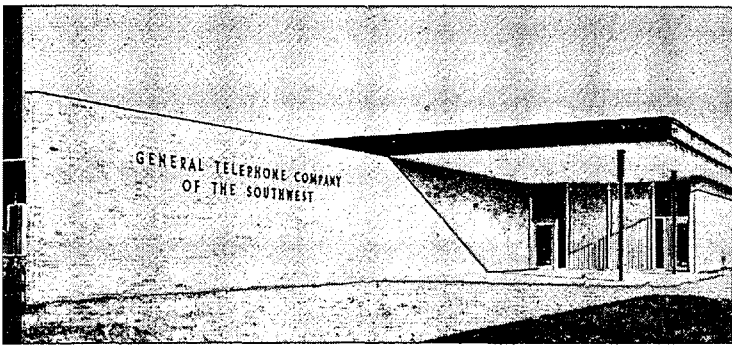
Metallic effects are generally considered to be most effective and most durable; nevertheless, general decor of the interior or exterior design and coloration of a building may make it desirable to use color. As an example—plain, neutral walls, such as architectural concrete or concrete block, may require colored letters.

Color may be obtained most economically through use of steel which has been given a paint-grip surface; the appropriate color of enamel is baked onto this surface. Work must be done with extreme care since steel will rust. To prevent rusting, the steel should be bonderized or given a similar treatment before the enamel is applied. Aluminum can also be prepared to receive enamel. Use of aluminum will definitely eliminate the rust

problem. Both metals can be painted if desirable. Regardless of the metal selected or type of coloration or color process used, the architect must check carefully to see that specifications are met. If the metal is to be painted, the specifications should call for a "fast-color" paint, intended for outdoor application. A commercial paint not specifically intended for outdoor use and not compatible with metal painting surfaces should not be allowed. In specifying the metal, specifications should read "bronze metal" and possibly list various percentages of metals used to make the bronze. Terms such as "bronze-coated" or "bronze-color" should be avoided. The client may think he is getting bronze metal, but the supplier is offering a less expensive simulated letter. Difficulties can be encountered in specifying aluminum, too. For example, an aluminum "finish" can mean steel or wood painted with aluminum paint just as easily as genuine metal letter. "Aluminum metal" is what the specifications should read in most instances; also, include alloy number.

Further, specifications should actually state how the castings and molds are to

Hedrich-Blessing



Hedrich-Blessing



Frank L. Miller

be made, as well as describing metals and finishes to be used. If this is not done, the specification should refer to an established and accepted procedure. These details are necessary so that the manufacturer is certain to use the correct mold-making metal and alloy. The client is assured that other manufacturing operations are done by skilled men and that all melting and casting are done under properly controlled conditions. Control is of utmost importance, and an architect should not select a source nor approve an "equal" unless he is familiar with the qualifications of the manufacturer. For instance, if the temperature of an alloy is raised beyond a certain limit in the casting and pouring operation, porosity will develop in the letters—their appearance will be substandard and maintenance problems greater. Maximum temperature allowed should be a part of the "specs." Any visible pock marks in a metal letter should be indication of rejection. Grinding and finishing must be carefully done and a description of the finishing operation should be included in the specifications. The best way to do this is to state the number of steps neces-

sary for grinding and finishing. Three steps may mean an inferior job because changes of grinding wheels or finishing surfaces is too abrupt. Five steps constitute normal procedure and naturally this produces the better finish.

Fastening methods to be used should also be described accurately in the specifications for metal letters. Reputable manufacturers will offer a variety of fastening methods and sound recommendations as to why one method should be used in preference to another. One cardinal principle to keep in mind is that the quality of fastenings must be equal to or better than the quality of the letters themselves. To avoid streaks of rust, iron fasteners should be avoided and stainless steel, bronze, or aluminum used, even though the cost may be higher. In addition to the material, specifications should also state the exact location of fasteners and preparation of the mounting surface.

Basically there are two methods of fastening: The simplest is fastening the letter directly to the mounting surface with only a slight projection allowed for wash; the second method is the use of brackets which are fastened to the mount-

ing surface and to the back of the letter.

All mounted pieces will be placed so that they project from the wall or surface to some extent. This is necessary because shadow enhances legibility. The amount of projection can vary, of course; for instance, letters mounted on a brick wall opposite an entrance or approach will need little shadow, while plain letters mounted on a neutral wall will need considerable shadow.

Quality versus cost is the primary problem in selecting materials for metal identification letters or logo castings. Quality versus cost is likewise the primary consideration in evaluating a suggested "equal" to a specified item. A little thought easily shows that saving a small percentage of initial cost on identification of a building is not a saving at all if quality of materials and workmanship obtained do not produce satisfaction over the long term.

In the long-run, quality pays and an architect ought to keep in mind the factors outlined in deciding whether to accept or reject metal identification letters suggested as "equal" to or better than what has been specified.

In panel curtain-wall construction, means must be provided to resist wind forces and to carry weight of various components to the structural frame. Because of its lightweight-high-strength ratio, welded-steel tubing performs as an efficient and economical support material for thin-skin walls. Discussion of method, examples of installation, and selection of tubing are presented here.

welded-steel tubing: curtain-wall applications*

When the devastating tornado of April 1957 struck Dallas, Texas, with its full force on the newly finished 13-story Exchange Bank and Office Building (*Figure 1*), one of nature's most crucial testing devices proved that the architect's choice of a new lightweight structural principle for the building's curtain-wall construction—using welded-steel tubing as frames and supports—was a good one that resulted in not only an economical but also a safe, weatherproof structure. That month's rainfall of 13.33", wind-driven up to 73 mph, was the heaviest recorded at Dallas in 40 years. Following an afternoon during which 3" of rain fell in solid wind-blown sheets, an inspection was made of all interior surfaces of the bank building's

curtain wall, window by window, checking for leaks and damage. Not a single leak was found! The use of rectangular welded-steel tubing, with its inherent structural advantage of lightweight-high-strength ratio, was without doubt a primary instrument in proving the ability of the window walls to carry excessive wind loads and to provide maximum weather-tight protection.

While the concept of curtain as opposed to loadbearing wall is not new, the increasing number of applications of strong, lightweight, welded-steel tubing for frames and supports is comparatively recent, and represents a significant advance in structural engineering.

characteristics

The welded-tube form has enabled the designer to create a trim and efficient

steel support that has proved successful in achieving substantial cost savings. Its lightweight-high-strength ratio vs. that of more costly and heavy structural steel, enables an architect to include in his plans more appropriate curtain walls by reducing size and weight over designs of conventional methods.

Tubing generally serves to transfer wind load from the curtain wall to the structural frame, and to carry the weight of curtain-wall paneling and windows. In some instances, the tubing also supports the dead load of sun-shade devices. The framing may consist of horizontal and/or vertical mullions, either exposed or concealed in the completed wall. Grids made of tubing may be installed in separate pieces or prefabricated into larger units joined by welding or by mechanical methods. Of special interest to the build-

* This article has been developed from data supplied by the Formed Steel Tube Institute, Cleveland, Ohio.

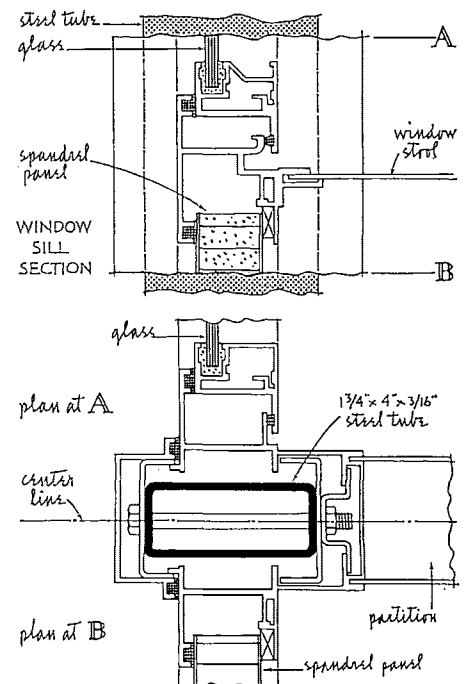
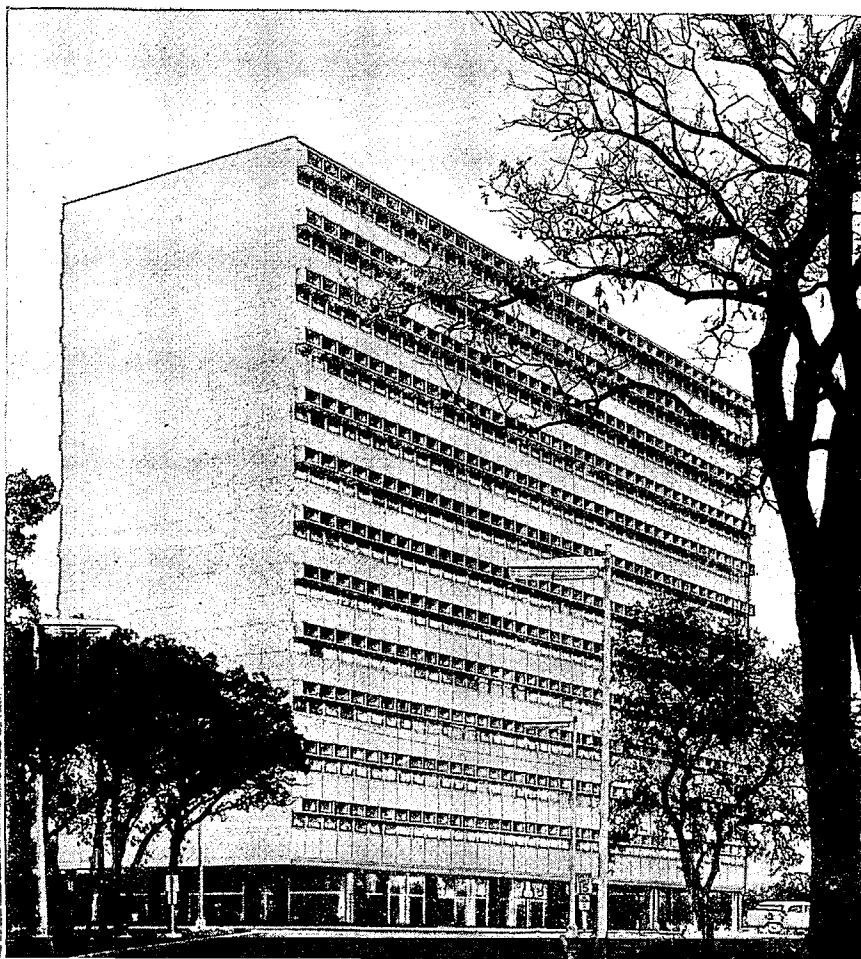


Figure 1—Exchange Bank and Office Building, Dallas (left); curtain-wall details (above and acrosspage). Thirteen-story structure having panel curtain-wall system supported by welded-steel tubing.

Photos: Ulric Meisel

ing owner is that shallow-tube sections permit true thin-wall construction, thereby increasing the amount of usable and rentable floor area.

Prefab sections of welded-steel tubing are readily available from most tube producing mills. Their light weight makes them economical to transport from the producer and easy to handle on the job. Curtain walls can be fabricated into larger sections off the job, greatly reducing the number of job-site joining tasks that sometimes are sources of trouble or causes of delay.

Installations

In addition to the Exchange Bank and Office Building (Architects: Lane, Gamble & Associates), other tall office structures that have curtain walls of welded-steel tubing are: the 14-story First National Bank Building Addition (Figure 2), Oklahoma City (Architects: Sorey, Hill & Sorey); the 28-story Murchison Tower, Denver (Architect: Raymond Harry Ervin); the 10-story Braniff Building, Dallas (Architects: Lane, Gamble & Associates); and the seven-story Kern County Courts and Administration Building, Bakersfield, California (Architect: Ernest L. McCoy).

Many of the techniques developed in curtain-wall design employing welded-steel tubing for skyscraper construction

can be profitably transferred to light-construction projects. This is especially true for one- and two-story schools, shopping centers, and some residential designs. One-story buildings, however, sometimes present an anomalous situation. The curtain wall for buildings of this height, designed to support its own weight and to resist wind loads when supported by welded-steel-tube framing, also has sufficient strength to be used as a bearing wall to support relatively light roof loads. Whether it then ceases to be a curtain wall is a question for the theorists. The fact remains, however, that a panel designed as a curtain wall can best double as a bearing wall when it is reinforced by welded-tube structural members.

Major advantages of welded-steel tubing in school applications are emphasized at The Francis Dunlavy Elementary School at Lebanon, Ohio—designed by Joseph Baker & Associates.¹ This school (Figure 3) is composed of five separate buildings housing 16 elementary classrooms plus multipurpose and administrative units in a campus-type arrangement. The buildings are connected by open, but sheltered, outside corridors as found in the West and Southwest. Common-size welded-steel tubes are generally used—

¹ Featured in the United States Exhibit of School Buildings last July at the 20th International Conference on Public Education in Geneva, Switzerland.

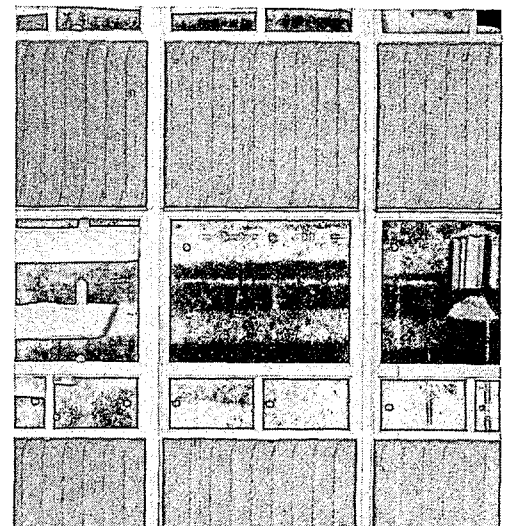
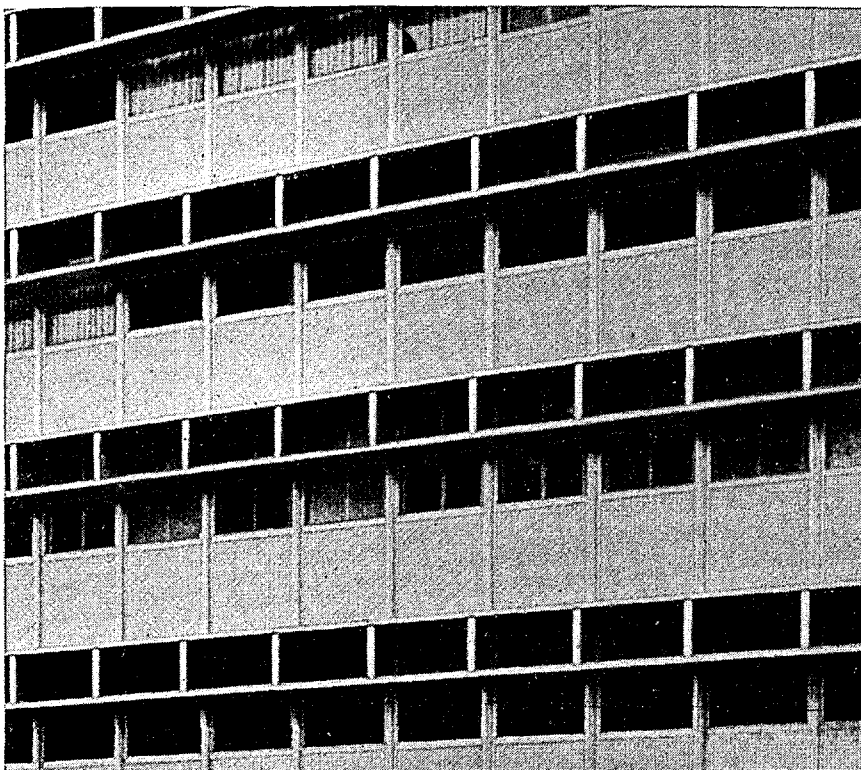


Figure 2—Addition to First National Bank Building, Oklahoma City (elevation and detail of wall, above). This 14-story panel curtain wall is secured to framing by very thin— $1\frac{1}{4}$ " x 4" x .180"—tubing.

Photos: Jacoby's

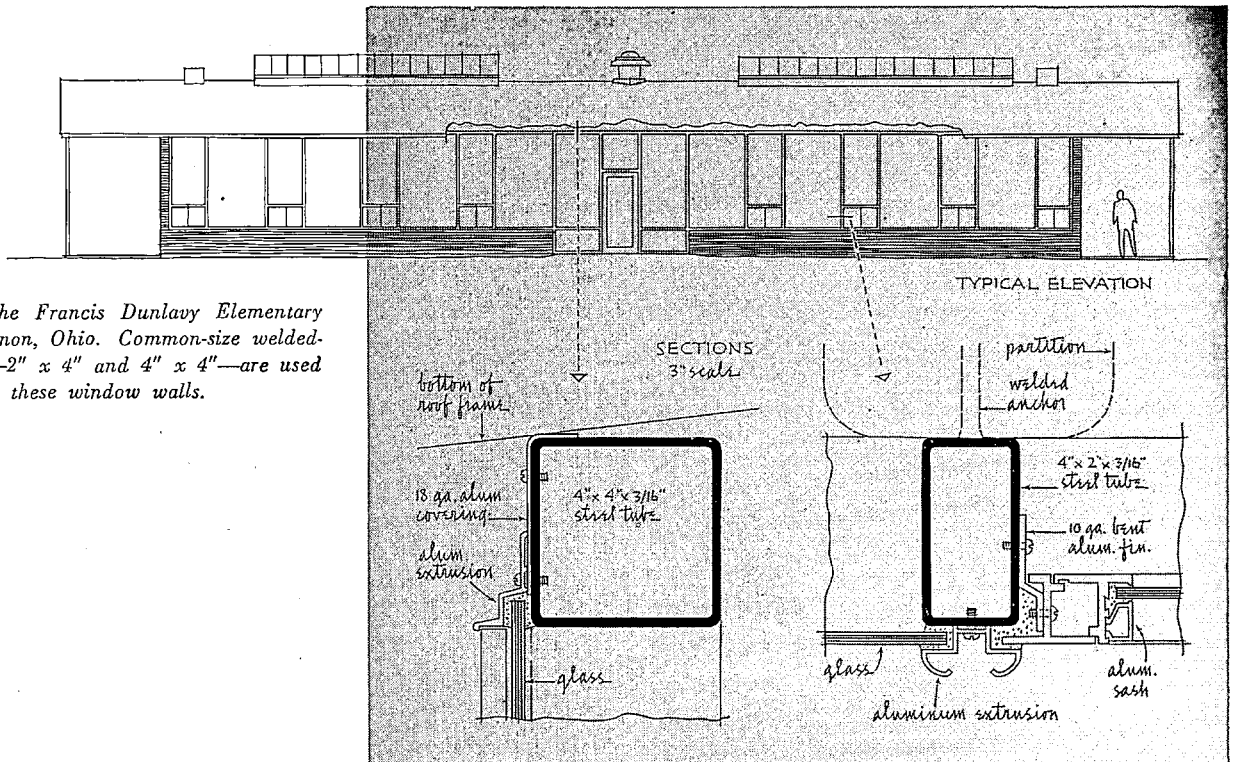
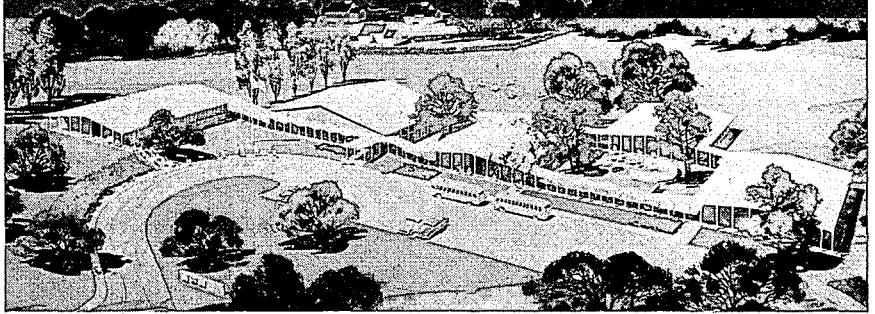


Figure 3—The Francis Dunlavy Elementary School, Lebanon, Ohio. Common-size welded-steel tubing—2" x 4" and 4" x 4"—are used primarily for these window walls.

2"x4" and 4"x4" with an occasional 2"x2"—while various other sizes are used for bracing only. Wall thickness of all tubes is held to 3/16" (7 gage, 0.1875"). The steel is new billet, mild steel of A-7 Federal Specification. Finish of all tubes is cold drawn with a shop coat of zinc chromate applied at the mill. Two or three coats with lead and oil or enamel will be applied after erection.

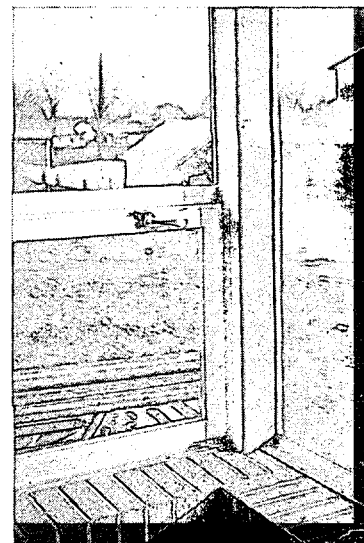
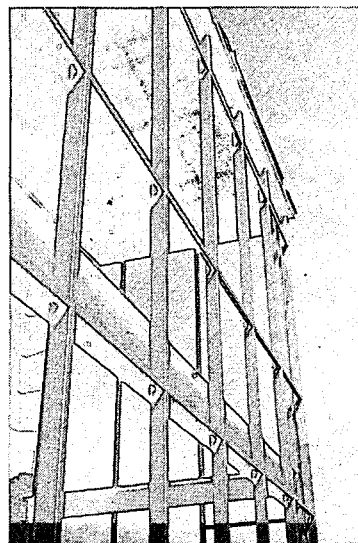
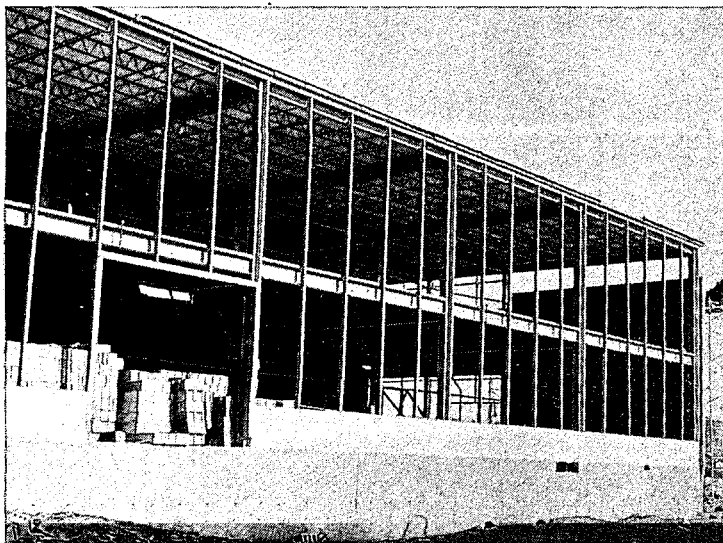
In other schools designed by this firm (Figure 4), welded-steel tubing is used almost exclusively for enclosing walls. Usually, 2"x4" tubes serve as mullion posts with the 2" face out, where the

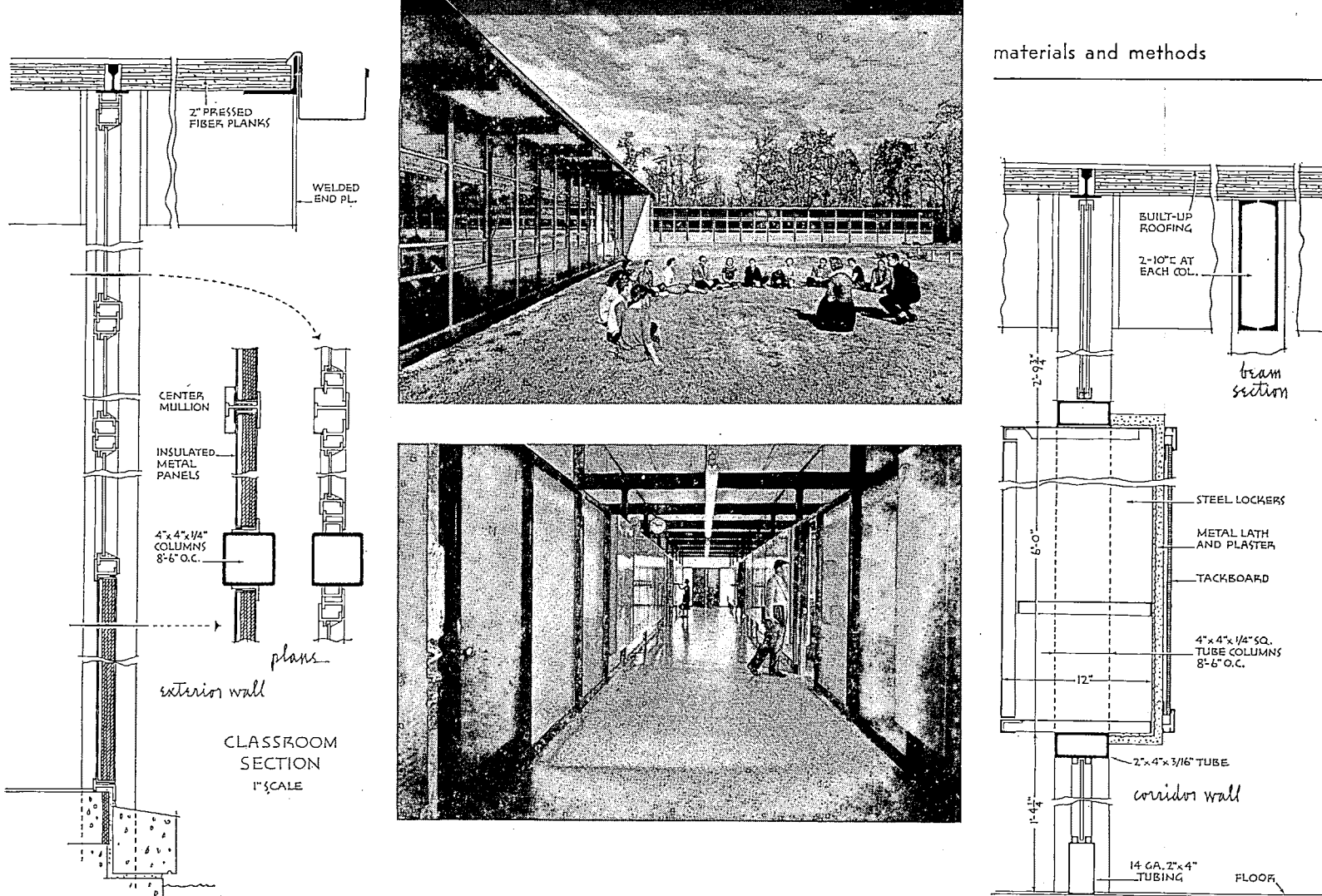
strength of steel is needed to resist wind loads and carry the roof overhang. A 4"x4" tube, welded to the tops of these posts, serves to replace the back part of a confirmation sash. For the face, aluminum extrusions are used as exterior trim. (For monumental buildings, stainless-steel tubing can be specified to eliminate the need for separate trim.) Sash is found only where ventilation is needed.

In the Southeast, the citation winning Wilson Junior High School² in Mecklenburg County, North Carolina, designed by A. G. Odell, Jr. & Associates, is un-

² Second P/A Design Awards Program.

usual in that it was almost entirely shop-fabricated for speedy assembly (Figure 5). The plan consists of a cluster of units for separate age groups—classrooms for seventh, eighth, and ninth grades made up of six rooms each, plus six special classrooms, homemaking and administrative units, and a multipurpose room and shop. Welded-steel tubing paid off in economy and speed of fabrication and erection with promise of many years' durability and trouble-free service. Except for small wall areas in service portions, the framing consists of 4"x4" tubes with 0.250" wall thickness used as columns and welded





box beams made up of two lightweight channels.

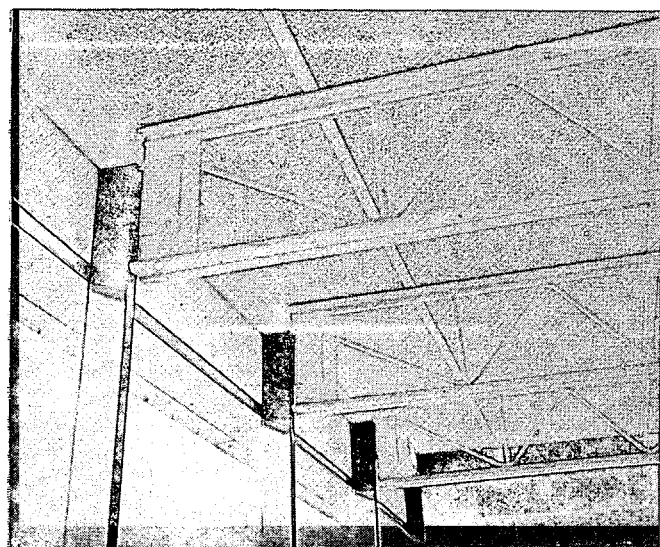
The architect preferred square tubing for columns instead of the conventional round. "Although it costs more," Odell has said, "square is more economical, since the flat sides make attachment of beams, windows, spandrels, sliding glass doors, etc., considerably easier." In five other schools now under construction, this firm has specified welded-steel tubing in square form for frames and supports.

A new "packaged-plans" idea for low-cost, expandable, single-story schools—to be developed into final form by local

school architects—has recently demonstrated its practicality in the Otter Creek Elementary School at North Terre Haute, Indiana (Figure 6), designed by Yeager Architects, Inc. Design and layout possibilities are numerous and involve the use of standard, readily accessible building products adapted to a basic, flexible plan—modular in design since it incorporates standard dimensions in unlimited combination. It is planned that architects will be retained to adapt the basic pattern to individual requirements of capacity, arrangement, instructional concepts, suburban terrain, and other variations.

Figure 5—Wilson Junior High School, Mecklenburg County, North Carolina (above). For speedy erection, almost entire structure was shop fabricated. Details shown: exterior wall (far left) and corridor wall (above right). Photos: Joseph W. Molitor

Figure 4—details from schools designed by Joseph Baker & Associates (below). Examples show typical locations of welded-steel tubing applications in one- and two-story curtain walls for schools.



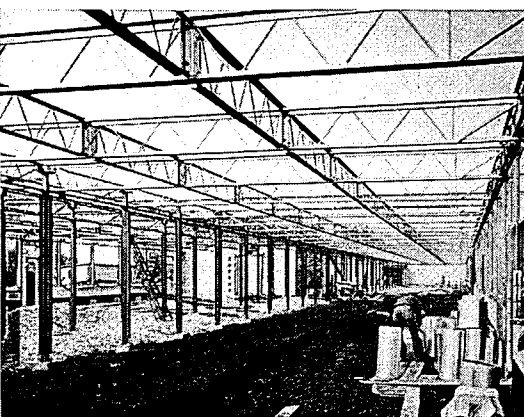
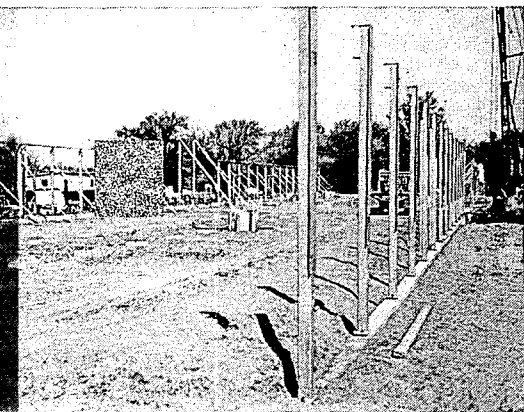


Figure 6—construction views of Otter Creek Elementary School, North Terre Haute, Indiana. Example of “packaged-plans” school uses standard, readily accessible building products adapted to basic, flexible plan.

Typical of other possible welded-steel tubing applications are tubular handrails. Because of lasting appearance, strength, and corrosion resistance, stainless tubing is becoming widely accepted for both interior and exterior handrails and balustrades. An unusual handrail design finished in porcelain enamel was developed by Ralph R. Calder for several buildings on the campus of Michigan State. There, the tubing was designed slightly larger in diameter than the shorter pieces of wrought-iron pipe fittings used for joining. Ends were slotted lengthwise to provide “spring” and to insure a tight fit after insertion into ends of the enameled pipe. Thus, a butt joint was provided at each connection and self-tapping metal screws, which fasten to the inner fitting, secure the assembly. A special type of acid-resistant porcelain enamel was applied to produce minimum surface friction and maximum resistance to perspiration acids and oils originating from constant handling. Non-etching characteristics, wear resistance, and color permanence assure the existence of such hand-railing for the life of the building.

selection of welded tubing

The possibilities for the use of welded-steel tubing—carbon and stainless steel—in architectural applications are great. Here are additional facts about its technology needed by the various members of the architectural team.

Welded-steel tubing is regularly made in round, square, and rectangular sections,

and in special shapes when mill order runs can be utilized (Figure 7A). Round welded tubing is progressively roll-formed from hot-rolled pickled or cold-rolled steel, with the butting edges fused together by electric resistance welding (Figure 7B). Square, rectangular, and special shapes are made by re-rolling or cold-drawing, deforming the round welded tube to the required contour (Figure 7C).

The roll-forming process used to manufacture tubing does not alter the gage dimension of the flat-rolled steel; therefore, it produces a round tube of exceptional uniformity of inside and outside diameter wall thickness. Round welded tubing also is extremely concentric. These same qualities are maintained in all other shapes deformed from the round tube. Square and rectangular tubing dimensions most commonly used in architectural applications are as accurately held in width, depth, or wall thickness as the round tubes from which they are deformed. The diagonal dimension is usually held to plus or minus 0.015". Convexity or concavity on the sides does not exceed 0.010" on sides up to 2½". Squareness is held to plus or minus 0.006 times the dimension of the longest side.

Most of the quality tube producing mills can furnish welded-steel tubing fully prefabricated-to-specification, complete with welded flanges or drilled for mechanical fastening, or with other types of attachment devices welded in place. Such conditions are rapidly becoming common practice, since most suppliers

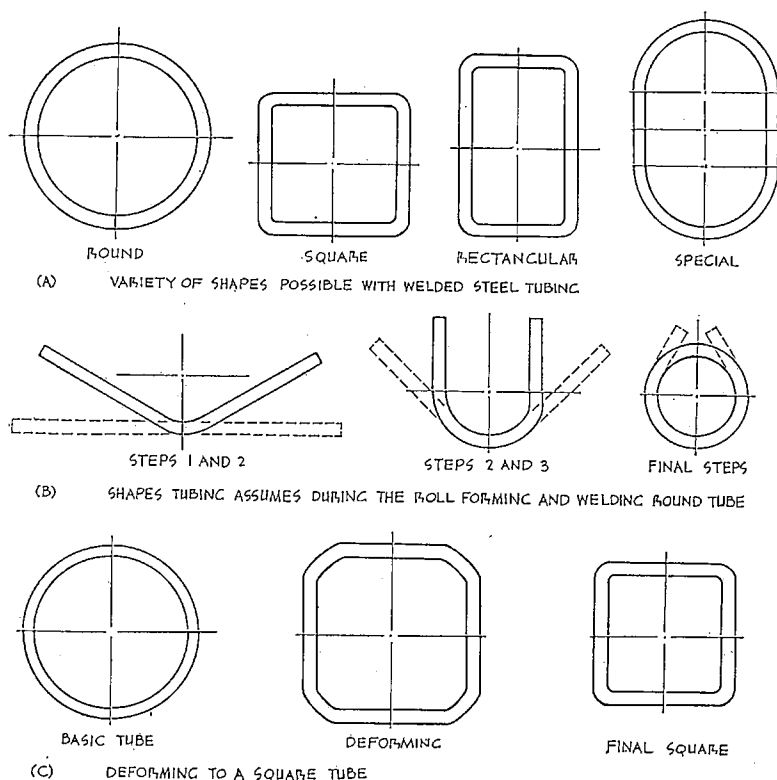


Figure 7—A—possible shapes; B—stages in forming and welding; C—deforming steps.

will deliver a "ready-to-install" product to the job site in KD form. Many intermediate degrees of prefabrication can also be specified.

Without a complete realization of all inherent advantages, architects and engineers have already made extensive use of welded tubing as described previously. Many of the current uses, however, reveal that most architects think of the material primarily for compression loads.

All welded-tubular shapes of equal cross section serve equally well as tension members; however, in compression loading, each has its own uses. For one-directional side loading, either in columns or beams, the rectangular section excels when placed with the long axis of the section in the direction of loading. Square tubing is most efficient for two-directional loading.

The formula needed to determine the size of section required for a member in tension or compression is $S = F/A$, where S equals strength (allowable stress), F equals force (applied load), and A equals area (in sq in.). Of course, forces other than axial enter into most applications of tubing—such as eccentric loading, for example, which would introduce bending. These must be considered separately and an adequate section specified to resist them properly. For example, long columns of tubing must be as large in diameter as possible, yet not so thin as to induce collapse.

Design or selection of welded tubes to resist bending loads must be based on

application of proper beam formulae, using 20,000 psi as the allowable stress (plus necessary safety factors for abusive loading) and the tabulated or calculated moment of inertia value of the section. The bending moment will establish the moment of inertia requirement. Reference to welded-tube property tables will indicate the sections meeting these requirements.³ It then remains only to select the section best suited to the application.

The square tube is more valuable as a beam, especially where the loading is in two directions at right angles to each other. It is also efficient as a long column member for design conditions involving two-directional side loading. Of course, it is as strong as its cross section for tension or short column compression loading.

The rectangular tube is most valuable as a beam or a long column with one-directional side loading. It will resist tension, compression, or shear loads to the limit of its cross section.

In developing specifications for architectural applications of welded-steel tubing, the experience of the quality tubing manufacturer can be of great value, since technological advances in tubing have been so rapid that only those within the industry have remained fully informed.

³ Due to space limitations, complete formulae and property tables referred to cannot be included in this article. However, they are presented in a comprehensive Handbook of Welded-Steel Tubing published by the Formed Steel Tube Institute, 850 Hanna Building, Cleveland 15, Ohio. Available free to architect and engineer principals on letterhead request. Editor

TABLE I: Decimal Equivalents of Gages and Fractions of an Inch

Gage	Fractions of inch	Decimal equiv.—inch
11		.120
	$\frac{1}{8}$	.125
10		.134
	$\frac{9}{64}$	.1406
9		.148
	$\frac{5}{32}$	.1562
8		.165
	$\frac{11}{64}$	.1719
7		.180
	$\frac{3}{16}$	.1875
6		.203
	$\frac{13}{64}$	.2031
	$\frac{7}{32}$	.2188
5		.220
	$\frac{15}{64}$	.2344
4		.238
	$\frac{1}{4}$	.250
3		.259
	$\frac{17}{64}$	.2656
	$\frac{9}{32}$	.2813
2		.284
	$\frac{19}{64}$	.2969
1		.300

Gage numbers and fractions of inches are in general use in the building industry; the steel industry, however, more often uses decimals of an inch to designate wall thickness. The American Iron and Steel Institute has proposed the universal use of this latter more accurate designation.

TABLE II: Design Data, Elements of Sections

round tube

$$\begin{aligned} \text{Area} \quad A &= \frac{\pi}{4}(D^2 - d^2) \\ D &= \text{Outside diameter} \\ d &= \text{Inside diameter} \\ \text{Moment of Inertia} &= \frac{\pi(D^4 - d^4)}{64} \\ \text{Section Modulus} \quad Z &= \frac{\pi(D^4 - d^4)}{32D} \\ \text{Radius of Gyration } r &= \frac{1}{4}\sqrt{D^2 + d^2} = \sqrt{\frac{I}{A}} \end{aligned}$$

square tube

$$\begin{aligned} \text{Area} \quad A &= D^2 - d^2 \\ D &= \text{Length outside} \\ d &= \text{Length inside} \\ \text{Moment of Inertia} &= \frac{D^4 - d^4}{12} \\ \text{Section Modulus} \quad Z &= \frac{D^4 - d^4}{6D} \\ \text{Radius of Gyration } r &= \sqrt{\frac{D^2 + d^2}{12}} = \sqrt{\frac{I}{A}} \end{aligned}$$

rectangular tube

$$\begin{aligned} \text{Area} \quad A &= D'D - d'd \\ D &= \text{Outside length, long side} \\ D' &= \text{Outside length, short side} \\ d &= \text{Inside length, long side} \\ d' &= \text{Inside length, short side} \end{aligned}$$

On axis through center parallel to long side:

$$\begin{aligned} \text{Moment of Inertia} \quad I &= \frac{DD'^3 - dd'^3}{12} \\ \text{Section Modulus} \quad Z &= \frac{DD'^3 - dd'^3}{6D'} = \frac{2I}{D'} \\ \text{Radius of Gyration } r &= \sqrt{\frac{DD'^3 - dd'^3}{12A}} = \sqrt{\frac{I}{A}} \end{aligned}$$

On axis through center parallel to short side:

$$\begin{aligned} \text{Moment of Inertia} &= \frac{D^3D' - d^3d'}{12} \\ \text{Section Modulus} \quad Z &= \frac{D^3D' - d^3d'}{6D} = \frac{2I}{D} \\ \text{Radius of Gyration } r &= \sqrt{\frac{D^3D' - d^3d'}{12A}} = \sqrt{\frac{I}{A}} \end{aligned}$$

research report: modern masonry cements

The mortar, which must bond masonry units together for years, is of utmost importance in masonry construction. Ideally, the mortar is a material which, after hardening, neither shrinks nor expands to any degree that would alter the relative position of the masonry units nor allow space for the entrance of water. Watertightness and durability of mortar joints are essential to good performance and low maintenance. Durability is necessary to resist deterioration caused by alternate freezing and thawing and to keep the mortar in place permanently, continuing its job of binding the masonry units.

For many years, mixing portland cement, hydrated or slaked lime, and sand was the common method of preparing mortar. Proportions varied but experience led to relative standardization, in architects' specifications, on a 1:1:6 mix. Today, however, masonry-cement/sand mortars proportioned 1:3 are extensively used and are finding increasing favor in architects' specifications. Masonry cements for mortar have been developed and perfected through the years by portland-cement manufacturers who saw an opportunity to simplify and improve the mortar mix by combining the cementitious materials in one package.

In the early development of masonry cement, portland-cement manufacturers and some materials companies interground or mixed hydrated lime with portland cement and/or natural cement to have the masonry cement resemble the cement-lime combination in mortar. Complaints of excessive shrinkage or expansion from some of these early combinations were thoroughly investigated and many were found to be the result of inherent characteristics of the lime used in the mixture.

Producers found that the volumetric stability of a portland-cement/lime mortar varied considerably depending upon the type and source of the lime. Observing that the lime component frequently caused undue expansion, masonry-cement manufacturers looked for other materials

with which to improve their product. This points up one of the principal reasons for the wide substitution of finely ground limestone powder for lime in the present-day masonry cements produced by the majority of manufacturers. Limestone interground with portland-cement clinker produces a very fine powder which contributes extreme smoothness to mortars, together with a very high degree of volumetric stability from a chemical, as well as a physical, standpoint. In the extensive research and development work of perfecting masonry cements, the cement manufacturers also discovered that air entrainment in mortar greatly improved durability, workability, and watertightness—just as in concrete.

modern masonry cements

Today's quality masonry cements are mostly composed of an interground mixture of calcareous materials, portland-cement clinker, air-entraining agents and, in some cases, water-repellent materials. These materials are carefully proportioned and blended during manufacture to produce a uniform, sound product. Frequent testing of the product is done during manufacture to make certain that the requirements of ASTM and Federal Specifications for masonry cements are met.

Mortars containing quality masonry cements provide product uniformity, excellent water retention and workability, assurance against delayed expansion, durability against weathering, less initial and total shrinkage, and better job-control of batching and inspection.

soundness

The old pat test for soundness (pat over boiling water), although still a method shown in the lime specifications, has been replaced by the autoclave test in specifications for masonry cement. Soundness of masonry cements is assured when they are guaranteed to meet *ASTM Specification SS-C-181c*, which limits autoclave expansion to not more than one percent.

The autoclave test requires that a

1"x1" bar of 10-in. effective gage length be made of the cementitious material and subjected to high-pressure steam treatment for a specified period of time. Such treatment hydrates any active oxides to the same extent as would occur after many years of exposure to natural weather. If these oxides are present in sufficient amount, the bar will expand more than one percent in the autoclave—an indication of potentially harmful expansion of the mortar in the wall.

While limes are produced for many purposes, the only hydrated limes considered suitable for mortar are described in *ASTM C207* and designated as Type N and Type S. Type N lime is normal hydrated lime with no limit on unhydrated oxides; there is no test required for soundness of this lime. Such a lime, however, can contain enough unhydrated oxides to cause excessive delayed expansion with resultant expansion cracks. Type S limes are generally pressure-hydrated limes and differ from Type N limes by their ability to develop high-early plasticity and higher water retentivity, and by their limit of eight percent on unhydrated oxides.

In 1955, the State of Ohio conducted extensive tests on 10 brands of masonry cements marketed in Ohio and reported good uniformity in standard tests with the averaging results shown (*Table I*). Mixing these masonry cements with local sand, testing according to *ASTM C270: Mortar for Unit Masonry*, and testing for air, the average results are shown (*Table II*). The Ohio investigation also included autoclave tests on a mixture of two-parts masonry cement and one-part lime. It is significant that the two Type S limes used, when mixed in these proportions with masonry cement, caused expansion of two to four times the masonry cement alone. In these particular tests, however, the combinations using the select Type S limes fell within the one percent maximum limit required for masonry cements. While masonry cement specifications require the soundness test,

unfortunately the architect is not protected by a similar requirement in specifications for mortar mixes where other materials are involved.

durability

The durability of mortar joints is measured by their freedom from spalling and weathering during cycles of freezing and thawing. All recent laboratory tests and field experiences show that adequate air entrainment in a mortar mixture gives durability protection. This was recognized by both Federal and ASTM Specification bodies in recently revised specifications for masonry cement requiring a minimum air content of 12 percent. The same bodies, however, have not yet added a minimum-air-content requirement in the specifications, *Mortar for Unit Masonry*.

Freeze-thaw testing of mortar bars indicates the degree of durability of mortar mixes. The poor durability of the low air content mortar bars also illustrates the importance of adequate air entrainment with regard to the resistance of mortars to freezing and thawing. The air-entraining property of masonry cements is accurately controlled by measured additions of air-entraining agents during manufacture.

Finely ground limes tend to inhibit the air-entraining ability of air-entraining cements. For proper air content in cement-lime-sand mortars, an additional air-entraining agent needs to be added at the job and the mix periodically checked with an air meter.

shrinkage and absorption

Early shrinkage is greatly affected by the mixing-water demand of the mortar. The entrance of water into shrinkage cracks generally causes subsequent deterioration of mortar joints. The very low absorption of masonry-cement mortars impedes the soaking of water through mortar joints. This desirable characteristic together with air entrainment helps make the mortar more watertight and weather better than many old-type job mixed materials. Low absorption also

Table I

Gilmore time of set		Water retention	28-day compressive strength	Autoclave exp.
Initial	Final			
3 hr: 32 min	6 hr: 42 min	81.7%	2024 psi	.076%

Table II

Air	Water retention	28-day compressive strength
16.7%	79.3%	1603 psi

prevents excessive volume change due to wetting and drying.

ease of batching, inspecting

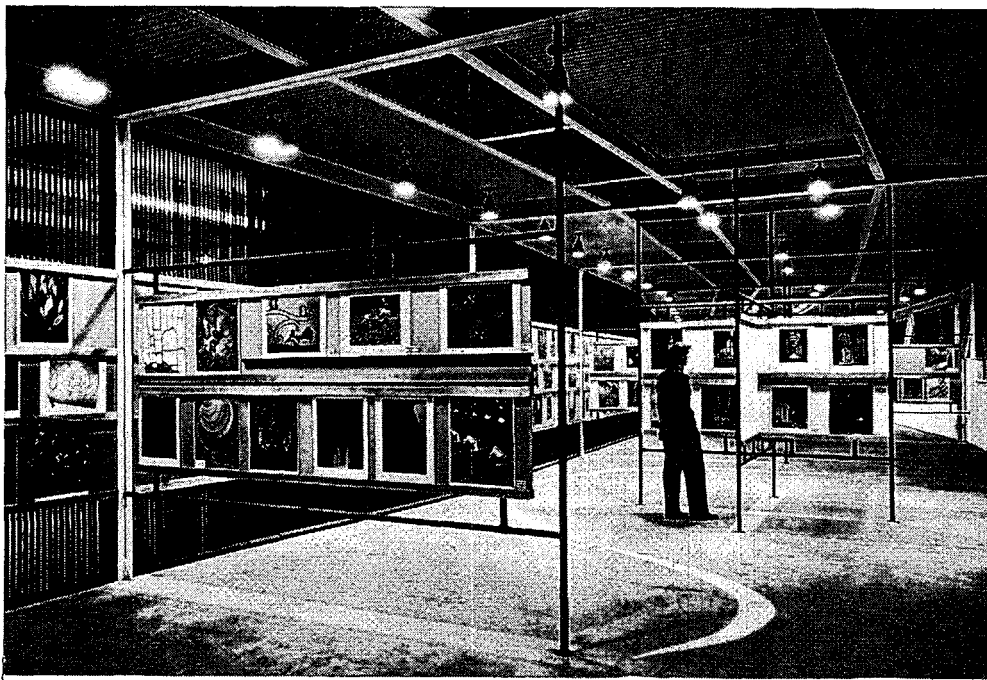
Since only one cementitious material is used in masonry-cement mortar, proportioning errors are minimized. If excess sand is used in violation of job specifications, a resulting harsh mix can readily be noted by inspection. This is not necessarily true when the cementitious materials are job proportioned, because a variation in proportions of cement and lime may allow large additions of sand which cannot be detected by eye but will result in a definitely inferior mortar. The plainly marked bag in which almost all masonry cements are packaged states clearly what specifications are met. This insures against using a cementitious material which does not pass the soundness test.

Specification masonry cement contains enough air-entraining agent to insure sufficient mortar air content for dependable durability.

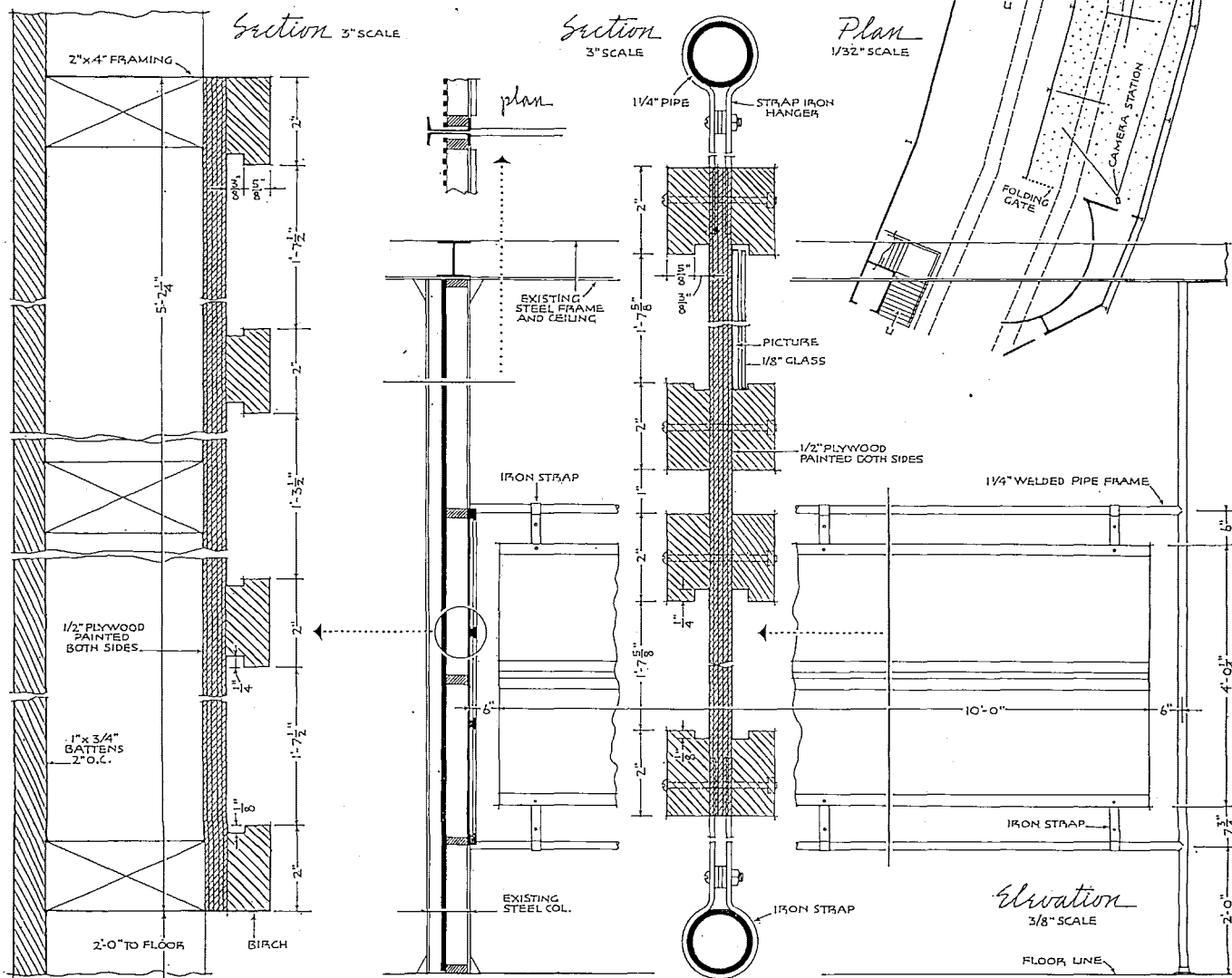
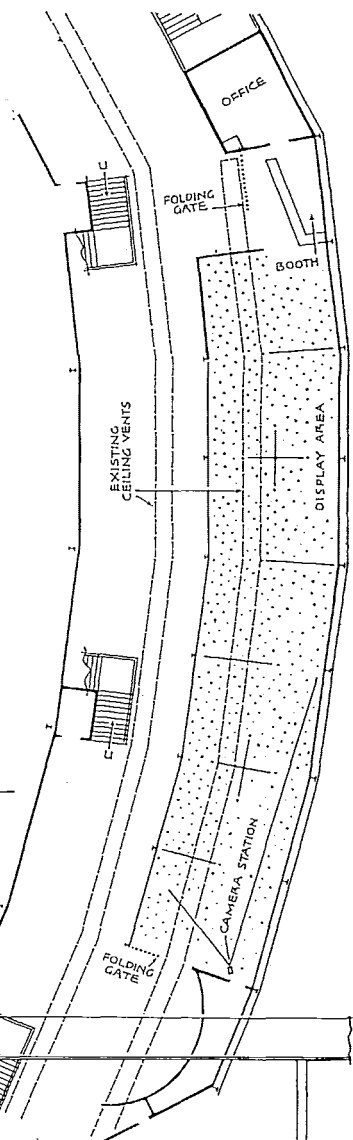
water retention, workability

Water retention and workability are somewhat dependent on each other. The air-entraining property of masonry cement helps produce higher water retention in the mortar which in turn improves hydration of the cement and provides workability. Adequate water retention prevents rapid loss of water from the mortar to the masonry unit. This greatly improves the bond strength of the mortar to the masonry units. Air entrainment produces minute air bubbles which act as lubricants and make the mix more cohesive and plastic. It also acts to prevent the formation of interconnected capillary systems or channeling caused by bleeding water. *Building Material and Structures Report No. 146: Plasticity and Water Retentivity of Hydrated Limes for Structural Purposes*, published by the United States Department of Commerce, shows how water retention and plasticity of limes is increased by soaking overnight, indicating the importance of this additional treatment.

display wall



DEARBORN-MASSAR

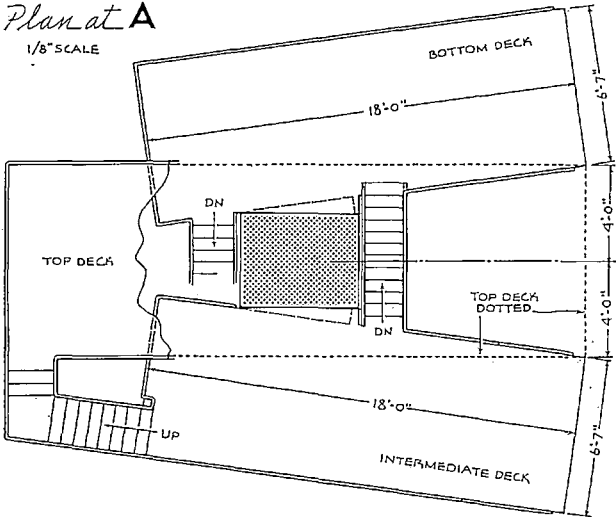


WESTERN WASHINGTON FAIR PHOTOGRAPHER SALON

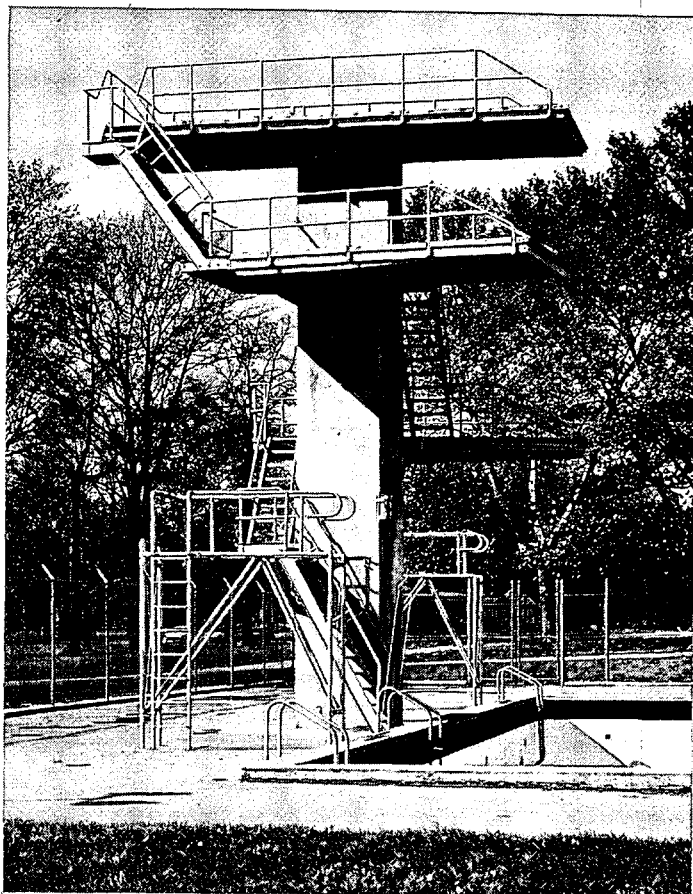
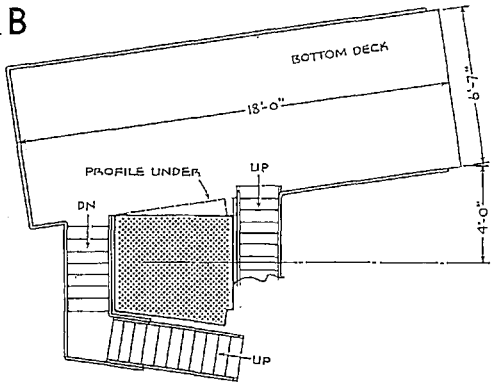
Robert Billsbrough Price, Architect

diving tower

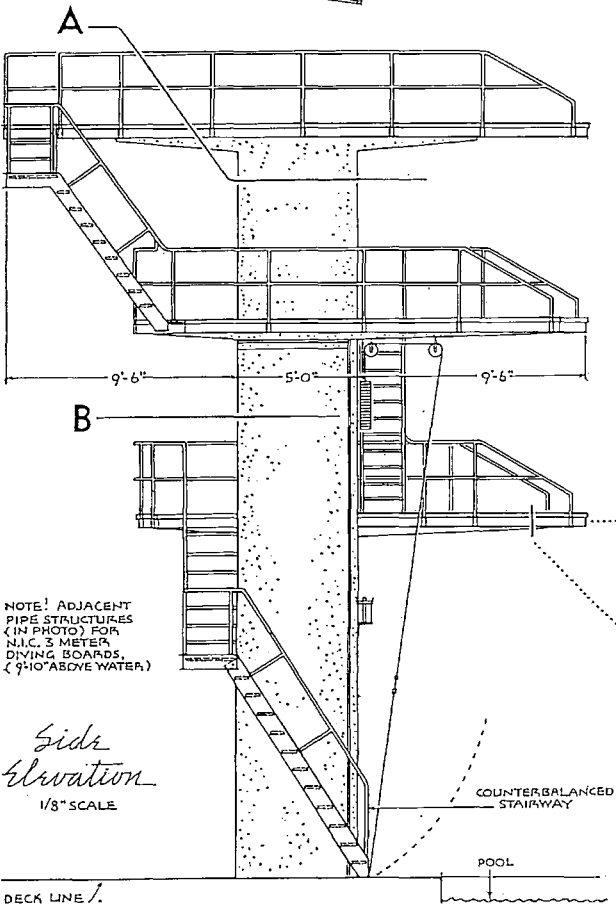
Plan at A
1/8" SCALE



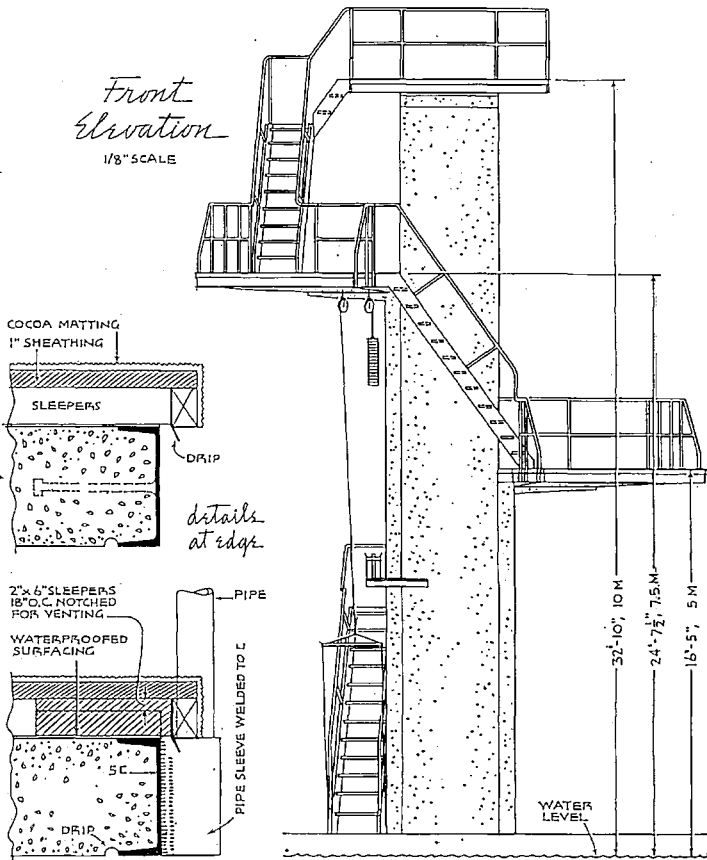
Plan at B
1/8" SCALE



LAWRENCE S. WILLIAMS



Front Elevation
1/8" SCALE



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Architect: Welton Beckett & Associates—Los Angeles, Calif.



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Plaster Chalkboards *by Harold J. Rosen*

Building-material manufacturers, as well as architects and owners, are equally striving to reduce the cost of building construction.

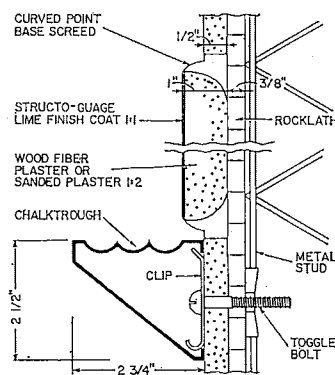
An old material which has been discovered recently to have potentiality in a new field is plaster used as a chalkboard surface. Ordinary plaster, conventionally applied, is not the answer. However, high-strength gypsum plaster having extreme hardness and durability, finished with a power trowel is being investigated and tried as a sound substitute for the conventional chalkboard.

A high-strength gypsum gaging plaster with a hardness factor exceeding that of Keene's cement finish and one which has easier workability than Keene's cement is Structo-Gauge, a product of the U. S. Gypsum Company. This material mixed with equal parts of dry lime, to which are added white silica-sand and lime proof colors and finished with a

power trowel, provides an extremely dense, hard-surface chalkboard with a colored background for paint application. By providing map rails, chalk troughs, and trim, a plaster chalkboard can be delineated on a plaster wall. The integral chalkboard provides an opportunity for unusual application in that the

area of chalkboard can be increased at practically no cost. It is claimed that maintenance of the plaster chalkboard presents no more of a problem than maintenance of a prefabricated conventional chalkboard.

The plaster chalkboards may be formed on any wall by outlining the board area with bead or casing, applying a hard dense basecoat of gypsum plaster to the thickness provided by this trim and finishing with a hard, dense gypsum gaging plaster-lime finish coat power troweled to smooth uniform surface. This surface is finished with one coat of primer sealer and two coats of chalkboard paint. This method may be used on concrete masonry units or on metal stud partitions lathed with gypsum lath. Due to their lack of compressive and tensile strength, lightweight aggregates should not be used for basecoats in this type of construction.



SPECIFICATIONS FOR PLASTER CHALKBOARD CONSTRUCTION (On Metal Stud Partition)

1. scope:

Plaster chalkboards shall be installed in all areas indicated on the drawings and as specified herein.

2. materials:

- METAL STUDS:** Standard product of a recognized manufacturer formed from cold rolled steel strips or fabricated from steel wire. Runner tracks and accessories for metal studs shall be manufacturers' standard items. Metal studs and accessories shall be given a coat of rust-inhibitive paint.
- GYPSUM LATH:** Shall be 3/8" thick gypsum lath, plain or perforated. Clips for attachment to metal studs shall be manufacturers' standard items.
- METAL TRIM:** Shall be 26 gage curved point base screed.
- BASECOAT PLASTER:** Neat gypsum plaster or wood fibered plaster
- FINISHING PLASTER:** Structo-Gauge gaging plaster.
- LIME:** Hydrated lime or pulverized quicklime.

3. installation of metal studs:

Runner tracks shall be provided at top and bottom of studs. Tracks shall be securely anchored to concrete floors and structural concrete surfaces above or to other adjacent structural support with concrete stud nails or other approved fastening. Both ends of studs shall be wired or clipped to the runner tracks. Shoe clips connecting studs to runner tracks shall be wired thereto with two double strands of tie wire. Studs shall be not over 16" on center.

4. lathing:

- Apply gypsum lath to either side of the studs using manufacturers' standard clips to fasten the lath to the stud. Joints in the lath shall be staggered between courses; joints in the lath shall occur between studs and shall be reinforced with manufacturers' standard clips.
- Cornerite shall be applied at all intersections of plaster surfaces. Intersections of plaster surfaces with unplastered surfaces shall be finished with casing bead.
- After the application of the gypsum lath, install the curved point base screed to outline the chalkboard and tackboard areas by either wire tying securely in place or stapling with 2" galvanized staples. All corner joinings shall be properly mitered (not coped). The 1/2" ground on the base screed shall face the field of the plaster and the 1" ground shall face the chalkboard or tackboard. All screed installation shall be level or plumb unless specifically indicated.
- Install picture mold as a map rail where shown on the drawings. All mold shall be level.

5. plastering:

- Plastering shall be two coat work consisting of basecoat

and finish coat:

- BASECOAT PROPORTIONS:** 1. Neat Cement plaster mixed with sharp sand in the ratio of 100 lb plaster to 200 lb of sand. 2. Wood fiber plaster mixed with water only.
- BASECOAT APPLICATION:** Basecoat shall be applied with sufficient material and pressure to form a good bond on the gypsum lath and to cover well and then doubled back to bring the plaster to within 1/8" of the face of the base screed in the chalkboard area and to within 1/4" of the face of the base screed in the tackboard area. (Minimum 1/8" finish is required for chalkboard area and 1/4" for mastic and 3/16" tackboard in tackboard area.) Basecoat on areas outside chalkboard and tackboard area to be finished to 1/2" ground of the base screed.
- FINISH COATS:** Finish coats of the chalkboard shall be applied first. The finish coat of the chalkboards shall be MACHINE mixed as follows:
100 lb Finish Lime
100 lb Structo-Gauge gaging plaster
7 1/2 lb Tamm's or equal black or green color
25 lb of #1 White Silica Sand
- Chalkboards shall be scratched and doubled back with the finish coat material to a minimum thickness of 1/8". Finish coat will be laid up carefully to the grounds surrounding the chalkboard and left after doubling free of ridges, cat faces, and winds.
- After the finish coat has taken up so it is firm to the touch, the chalkboard will be troweled twice with a Power Trowel. The first troweling shall be done with enough water to lay down any irregularities and bring the chalkboard to a smooth, dense level surface free of any irregularities.
- The second troweling should be done with no water after the finish coat is very firm but before it has set so as to leave the surface very hard and polished. Do not brush the blackboard after the final troweling.

6. painting:

When the chalkboard areas are dry they shall be painted with one coat of primer sealer and two coats of chalkboard paint of equal quality to that manufactured by Lowe Brothers, Pittsburgh, Sherwin-Williams, Glidden. Color to be selected by the Owner.

7. chalk trays:

Furnish and install chalk tray similar to Knapp Bros. #761, Loxit #BB-832 or New York Standard #100, directly under the chalkboard areas by attaching the snap-on clip to the plaster surface by toggle bolts or Molly fasteners. Screws may be used for attachment if wood strips to receive them were previously installed by wiring to the metal studs.



1

I would like to take issue with the implications of the phrase "design through structure." I hope that I will be allowed to take a critical stand without fear that the motives may be misunderstood by my architect friends or my engineer colleagues who know that I have worked for long toward a more constructive understanding of the relationship between structure and architecture.

The fact that many conferences are given over to discussion of matters of structure (recently, at a national gathering of young architectural teachers, the major topic was carried by a panel of engineers on the subject of structural forms) should be a reason for rejoicing and concluding that great progress has been accomplished during the last few years in again bringing together the two component parts of the building art that had been arbitrarily separated about a century ago by the discovery of mathematical analysis; a reason to surmise that a fresh love is blooming, and that, perhaps, out of this match, the new forms of the architecture of our time will be created.

Yet, upon closer analysis, one discovers something unusual; something one-sided in this courtship. It can be noticed that there has been a far more aggressive initiative on the part of the architect toward the engineer than vice versa, and I know of no architect who has been invited to speak about form at a gathering of struc-

tural engineers. I fear that the emphasis of purpose is being somewhat misplaced: that marriage is perhaps not intended! What should have been on the part of the architect primarily an effort toward better understanding of structure and structural principles, an attempt to make the acquired knowledge and sensitivity to structural behavior an integral part of his creative background, which would widen and enrich his design potential, has, instead, become merely participation in a kind of glorified refresher course, designed not so much at passing a higher standard of examination as to acquaint the architect with the latest tricks of the structural trade. Thus, "educated," he will be in the forefront, ready to grasp the latest form, the cleverest trick for incorporation in his very next project (and for publication in the earliest available architectural magazine). I fear that the too ready and uncritical interest of the architect in things structural betrays something of a forfeiture of his responsibility as a creator of environment and of his function as the maker of the physical forms of the society of which he is part.

Design, architectural design, the creation of environment, are ultimately the responsibility of the architect, and it is very seldom that structure alone is adequate to create environment or even to express architectural sensitivity. There are, of course, exceptions—some unconscious, such as the beautiful outstretched arms of the pylons supporting the suspension cables for the gas line across the Mississippi River—and some very conscious—such as Maillart's bridges (1), in their extremely sensitive response to the natural environment in terms of form and scale; a response that is revealing of Maillart's very rare twin gifts of design sensitivity and structural inventiveness.

Otherwise, in general, a structural expression alone, however brilliant, however imaginative, however "tensional" or

design and structure

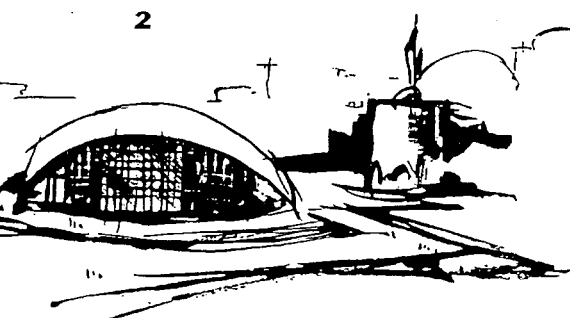
"tetrahedral," is not adequate or self-sufficient as an expression of architecture. Thus, "design through structure," should it become a prevailing trend, could mean the architect's withdrawal and surrender.

I do not imply by this, of course, that structure is not an essential part of architecture and that the ultimate form should not respond to and, in many cases, express the elements of structure. On the contrary, I rather take this for granted and go beyond. I believe that not only should we be understanding of and ready to develop the potential of new structural forms but we should also acquire the critical sensitivity necessary to exercise choice or rejection of structural forms and capable, if a choice is made, to carry through its implementation and its integration with the project as a whole. I believe that we should cease to drool, by reflex reaction, every time a new building is covered by a thin-shell dome or an entrance canopy is constructed with involved concrete shapes. I feel that it is time to develop a much more mature critical evaluation of the relationship between structure and form and cease to be taken in by the very novelty and cleverness of the forms that the structural engineer has evolved, with ingenuity and curiosity, out of available materials and techniques.

It is very important that this critique be developed and expressed in our architectural magazines: they have been very useful instruments in awakening the interest of the architect toward the structural forms and in bringing together the thinking of the engineer and the architect; yet they have been, in general, somewhat unsophisticated in analyzing the finished product that this new relationship has brought about. It is also very important that this critique be developed in the schools by giving added emphasis to the ability to *design*, and less reward to superficial cleverness. Of course, I do

* Chief Engineer, Victor Gruen Associates. This paper was delivered at the 1957 Convention of California Council of Architects at Coronado, California.

2



by Edgardo Contini*



3

not advocate by this a return to academic formalism but, rather, a wariness of the trend toward eclecticism that has received disproportionate acceptance in the solution of classroom problems.

I believe we need more critique and more tolerance of critique. Of course, critique in all matters of design, and especially in the architectural field, is a controversial subject. Yet it is still the best tool for cultural growth.

When analyzing the combined product of architectural design and structural inventiveness, there are a number of different criteria of critique that can be exercised.

First, indeed, are the criteria of balance and harmony. The question should be raised, once a structural form is selected and expressed, whether its relationship to the building as a whole and to its surroundings is an accomplishment of total esthetic balance. Let us consider, for instance, the St. Louis Airport. (Incidentally, I hope that, by choosing as the first target an example toward the design of which I was a contributor, I will be given absolution for any other critical remarks that might follow.) In the St. Louis Airport, an old form (the Roman basilica) was revived in proportions and scale consistent with our new materials (reinforced concrete) to create a space enclosure of somewhat new expression. Very good, yet the question should be asked: does the form fit properly in the total balance of the building? Is a cross barrel roof set on top of a two-story building, its points of support resting on the very corners of a delicate-looking structure, a properly expressed form of the structural equilibrium of a classical arched roof?

Conversely, in the case of Nervi's Exhibition Hall in Turin, should we not regret the lack of sensitive communication between architect and engineer that has resulted in a most imaginative and satisfying roof enclosure for an otherwise

conventional and uninspired building?

A second design criterion is purpose. Is the selection of a structural form consistent with the use and purpose to which the building is to be dedicated? Undoubtedly, the answer will be positive when a thin shell vaulted cantilever is used (such as the stadium at Bogota) to shelter the spectators where uncluttered visibility is a prerequisite. Is the answer still positive if we question the choice of a thin shell roof for the MIT Auditorium Building (2) which, by the very nature of its purpose, must be totally enclosed and secluded from the outside; in which the acoustical requirements deny the expression of the structure from within, and in which the levity and gracefulness of the form selected was visible and evident only for the short period between the removal of the form-work and completion of the enclosure of the building? I consider a critique of this building in this direction far more important than criticism of its difficulties of structural behavior, which must be attributed to the daring of concept and which should be accepted as part of growth through experimental knowledge.

The third element of critique is scale. While we certainly can develop interesting and clever forms for the enclosure of any space, shouldn't we respond to a sense of propriety suggesting that, for the covering of relatively short spans, the effort in development of new forms is occasionally wasted and meaningless? The hyperbolic paraboloid, delicately balanced on its two points of support, holds a superb design potential for the covering of a large uncluttered space, such as a hangar or a major open shelter, but does it make as much sense when used by Catalano in his house (3) to shelter a plan of otherwise relatively conventional nature, which impairs the viewing of the fully expressed form by partitioning and separations, and in which the varied and

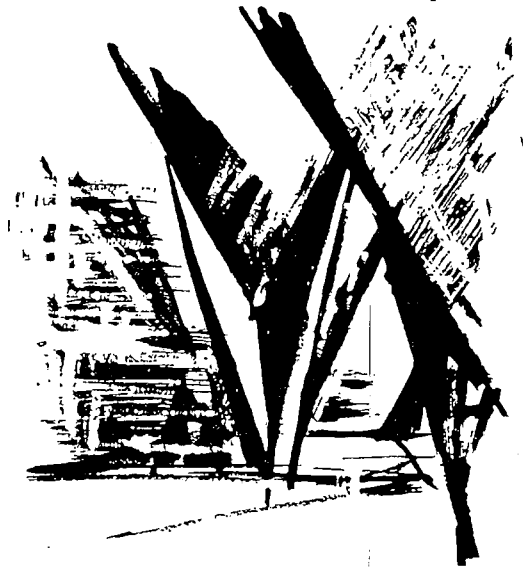
slight slopes of the ceilings in each room fail to express the basic concept that prompted the design?

The fourth criterion, and perhaps the most difficult to define, is the one of design consistency. When forms derived from structure are adopted, the problem of relating them to each other, to the various elements of a building, and to the surroundings of the building itself remains to be solved in terms of total architectural consistency, for the lack of which no amount of imaginative or technical brilliance can provide absolution. I saw recently the design of two projects of our friend, Candela. One, a fantastic, sensitive combination of vaults for a proposed large church project (4). The other, an industrial complex consisting of warehousing, office buildings, lofts, where an encyclopedic vocabulary of structural forms has been used, possibly with absolutely valid economic or structural justification. In the first case, I think the question of consistency would receive an enthusiastically positive answer; while in the second, architectural consistency seems to me to have remained unsatisfied.

I trust these remarks are understood not as critiques of individual projects or of individual architects or engineers. They are rather meant as a critique of us all; a critique, in a sense, of our lack of expressed critical response.

(Continued on page 230)

4

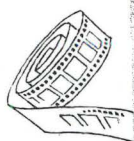


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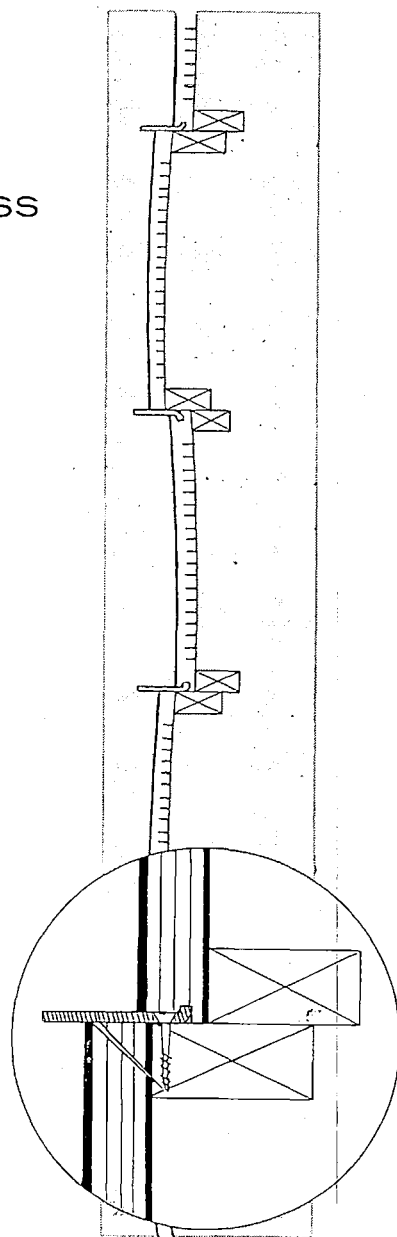
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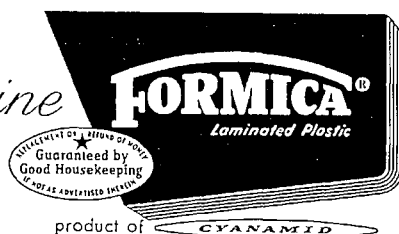
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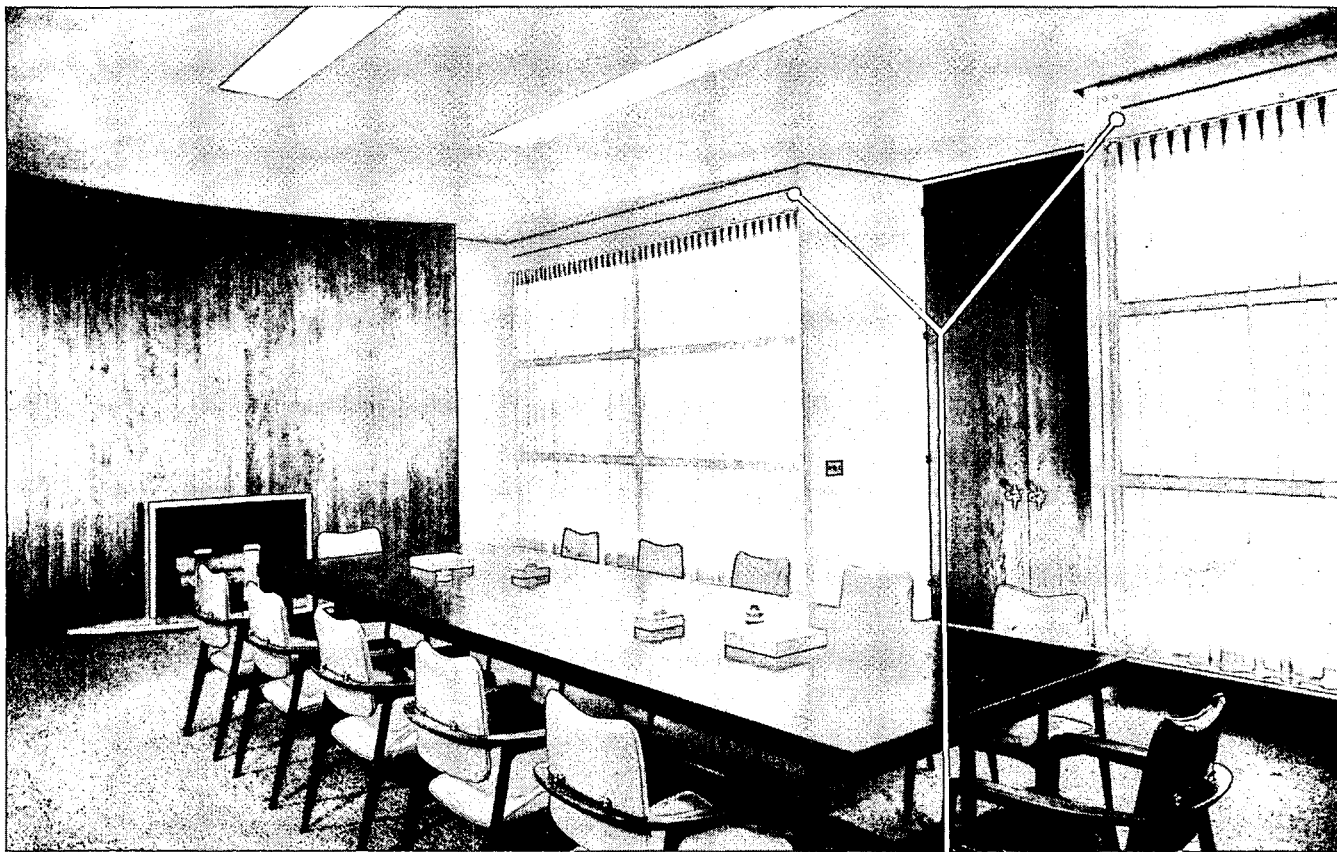
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Louise Sloane

airlines ticket office

“Motivational design” might be an apt name for the challenge of creating an airlines ticket office that must at once insinuate the lure of travel, proclaim the company’s service advantages, and state with dignity its functional safety and reliability. Such psychological orientation is clearly evident in the design of the three ticket offices that we show on the following pages.

An invitation to even the most disinterested to experience the charms of Japan is “the floating world of Yoshimura,” Japan Air Lines ticket office collaboratively designed by Japanese Architect Junzo Yoshimura and the American firm of Antonin Raymond & L. L. Rado. Viewed by the passer-by on the Rockefeller Center Promenade, the furnishings of the interior seem suspended in space, since no element touches another. Japan’s renowned “dry gardens” are represented through the full-length windows, and traditional Japanese household and landscaping motifs are recreated in contemporary materials and techniques. Composed with the taste and simplicity, characteristic of best Japanese work, the total design is entirely modern in its lightness, brightness, and elegance.

Craig Ellwood’s Los Angeles ticket office for KLM Royal Dutch Airlines achieves the bold, attention-getting quality for which European travel posters are famed. Strong, warm color areas and cool color planes are deftly juxtaposed, framed in gleaming aluminum, dramatically lighted. The look of cleanness, associated with Holland, is happily present, as is a reassuring air of solidity.

As staff architect for Capital Airlines, J. P. Baker is uniquely understanding of his company’s requirements for a specific facility as related to the whole; and a resulting co-ordination of design and function is inevitable. For Capital’s Fifth Avenue ticket office, the prime consideration was a design to compete successfully with neighbors and justify the special location. Turning a disadvantage (an unwanted mezzanine area) into an advantage, Baker created a commanding cove of light that cannot fail to stop pedestrian traffic, viewed through the unrestricted glass front. Materials and discreet color plan suggest luxury, design integration of the company’s familiar trademark is a reminder of reliability.

ticket offices



Photos: Leni Iselin



client	Japan Air Lines Company, Ltd.
location	New York, New York
architects	Antonin Raymond & L.L. Rado, Junzo Yoshimura

data

Design Theory: Showcased in New York's Rockefeller Center, this eye-catching ticket office draws on Japanese inspiration, executed in American materials and techniques, using the traditional Japanese concept of space to express today's jet age, and classic Japanese forms and motifs recreated in American technological terms.

Color Plan: All white floors and walls, with Sky Blue in the luminous ceiling, natural woods, black Formica.

furniture, fabrics

Round Tables, Stools, Wall Bench: white central shaft supports/ walnut hung drawer units/ black Formica tops on tables/ stools with multicolored Japanese silk upholstered tops on white tubular steel legs/ cantilevered slat bench with wall-hung backs and cushions upholstered in Japanese brocade/ architect-designed/ custom-made/ Richter & Ratner Contracting Corporation, 121 Johnson Ave., Brooklyn, N. Y.

Desk Chairs: walnut with brass frame/ Georg Jensen, 667 Fifth Ave., New York 22, N. Y.

Fabrics: Knoll Associates, Inc., 575 Madison Ave., New York 22, N. Y.

walls, ceiling, flooring

Walls: white plaster/ shoji wall of Sitka spruce, with back-lighted translucent plastic backing/ lattice wall of Alaskan spruce, adapted from the "koshi" vertical wooden strip shutter.

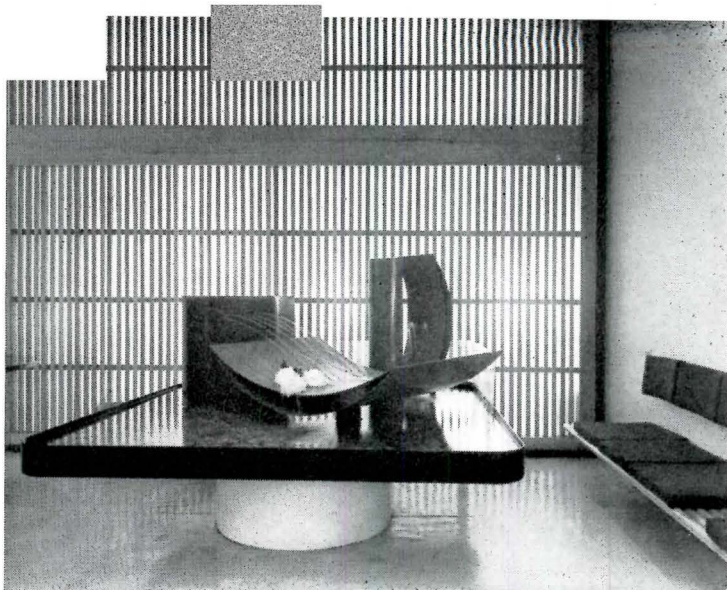
Ceiling: luminous ceiling with Sky Blue baffles spaced 12" o.c./ Luminous Ceilings, Inc., 2500 W. North Ave., Chicago, Ill.

Flooring: white vinyl/ Armstrong Cork Co., Lancaster, Pa.

display, sculpture

Airplane Wall Display: walnut/ architect-designed/ Roth Associates, 220 Fifth Ave., New York, N. Y.

Table Fountain Sculpture: Junzo Yoshimura in collaboration with Genchi Inokuma.

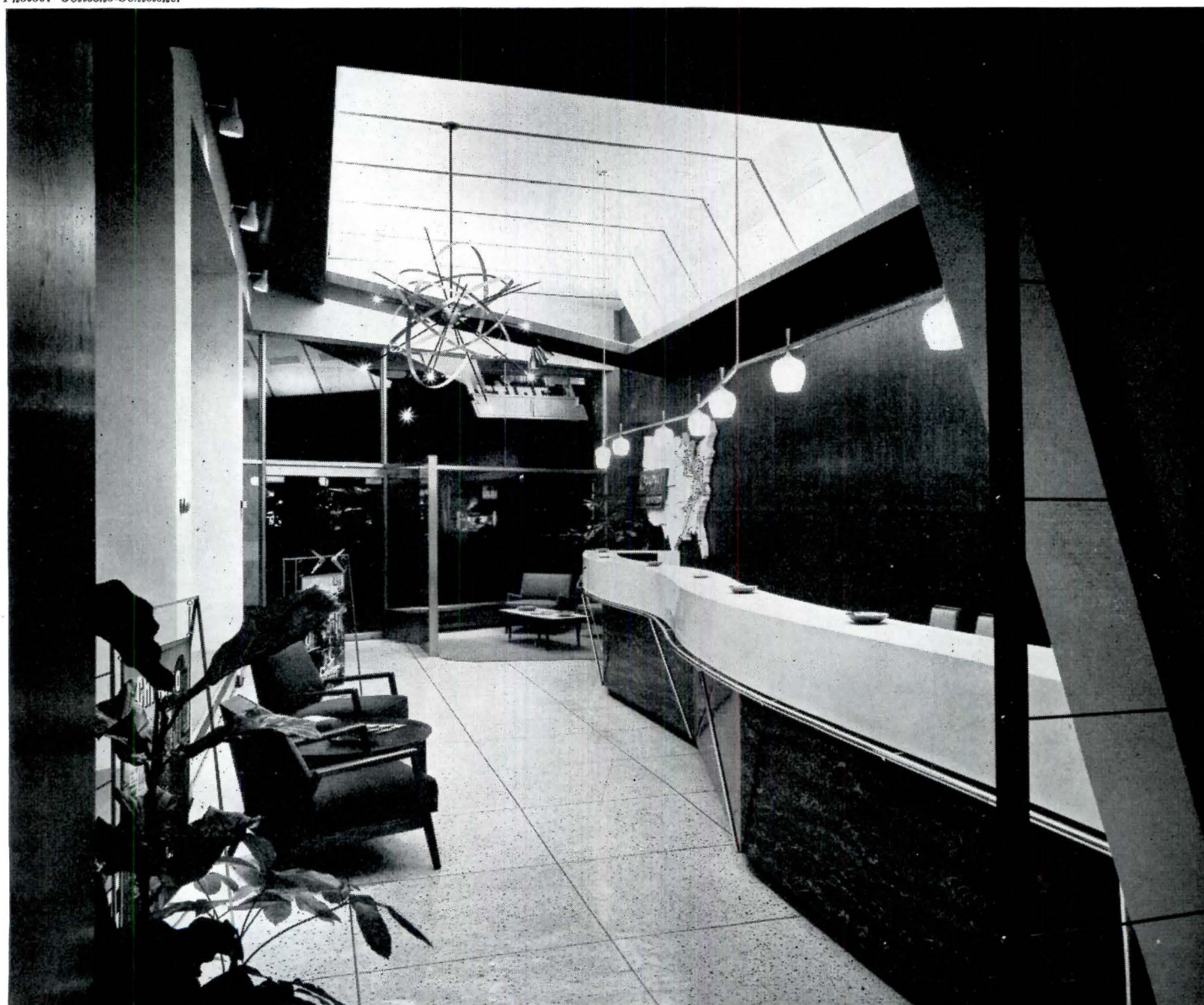


p/a interior design data

ticket offices



Photos: Gottscho-Schleisner



client	Capital Airlines, Inc.
location	New York, New York
architect	J. P. Baker, Administrator, Architectural and Construction Department, Capital Airlines, Inc.
associate architects	Schofield & Weed



data

Design Theory: In a design-competitive Fifth Avenue location, the problem was to convert the first two floors of an antiquated building (broken up into stores, shops, and a mezzanine over 80% of the area) into a design-effective ticket, sales, and traffic airlines office. Large glass areas were introduced to give breadth and view. The major portion of the mezzanine was removed, and the resulting space accentuated with a pitched plane in the form of an exaggerated light cove. The curvilinear ticket counter, feature light fixtures, produce visual excitement. Sales office is under remainder of mezzanine.

Color Plan: Basic scheme of white and gold against walnut, with accents of primary colors in fabrics and accessories.

doors

Glass: custom - pulls, architect - designed; "Herculite"/ Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

walls, ceiling, flooring

Walls: white-painted smooth-finish plaster/ 3/4" matched walnut plywood.

Ticket Office Ceiling: white-painted plaster, walnut strips.

Sales Office Ceiling: featured mineral acoustical tile.

Ticket Office Flooring: vinyl-tile, white with gray and gold aggregate terrazzo pattern, gold feature strip/ Robbins Floor Products, Inc., Tusculum, Ala.

Sales Office Flooring: "Trend-Tex"/ gold/ Mohawk Carpet Mills, Inc., Amsterdam, N. Y.

lighting

Feature Chandelier and Counter Light: custom-built/ designed by J. P. Baker/ Artcraft Lighting Co., 248 McKibben St., Brooklyn, N. Y.

Spotlights, Striplights, Desk Lamps: Lighting Associates, Inc., 238 E. 47 St., New York 17, N. Y.

furniture, fittings, fabrics

Counter: white Formica top/ gray linoleum work surfaces/ Parkwood marble faces/ bright polished brass guard rail and trim.

Desks, Chairs, Tables: custom-made/ architect-designed/ Robert Barber, Inc., 6 E. 53 St., New York 22, N. Y.

Tile-Top Tables: custom/ Mosaic Crafts, 80 W. Third St., New York, N. Y.

Planters: ceramic/ Architectural Pottery, Los Angeles, Calif.

Upholstery Fabrics: L. Anton Maix, Inc., 162 E. 59 St., New York 22, N. Y.; Norman Trigg, Inc., 15 E. 53 St., New York 22, N. Y.; "Nauqahyde"/ U.S. Rubber Co., Naugatuck, Conn.

Drapery: Fiberglas/ Greef Fabrics, Inc., 4 E. 53 St., New York 22, N. Y.; Irish linen/ Edward A. Roffman Associates, 17 E. 48 St., New York 17, N. Y.

accessories

Route Map: designed by J. P. Baker/ Rogay Industrial & Commercial Models, Washington, D. C.

Ashtrays: Design Technics, 4 E. 52 St., New York 22, N. Y.

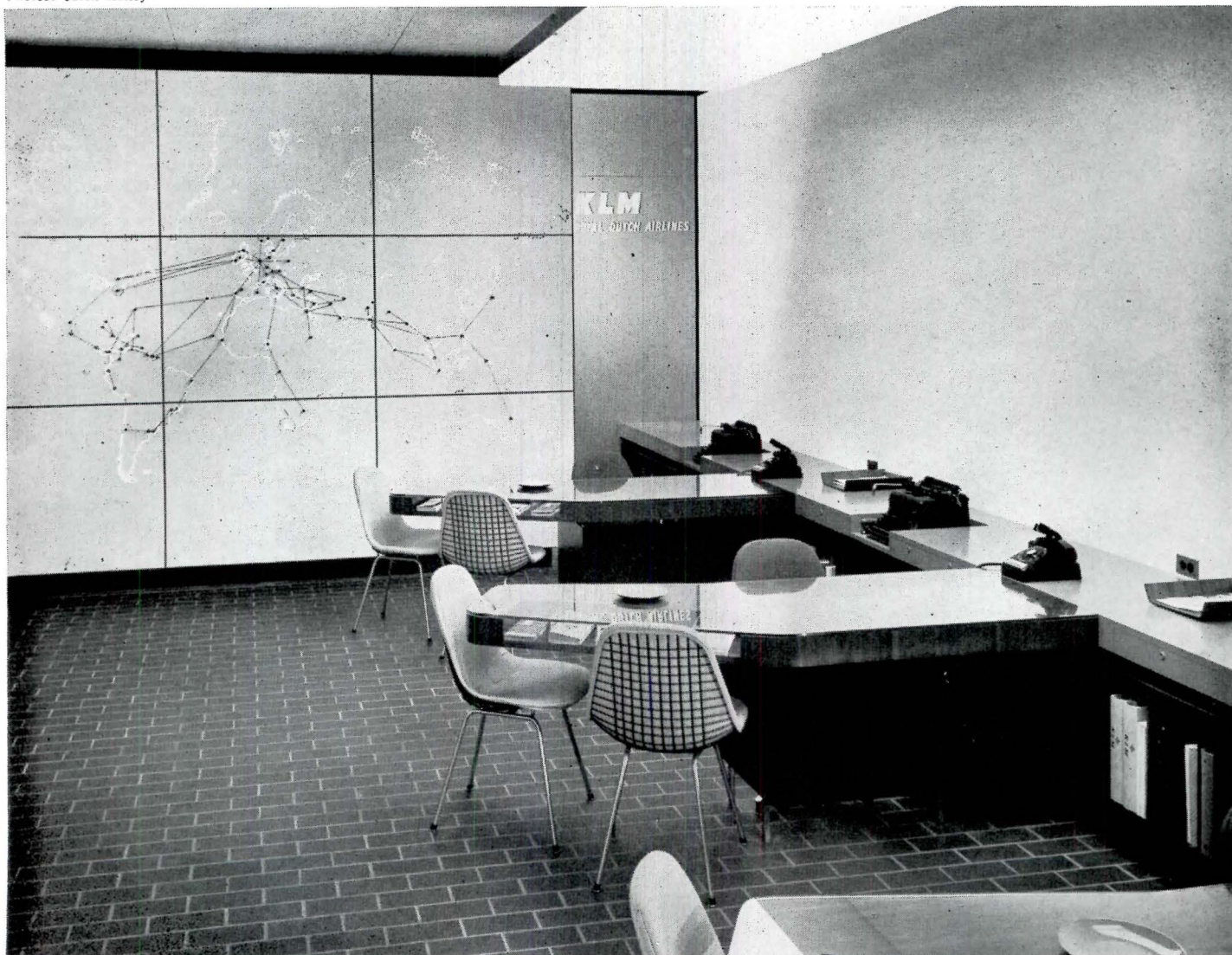
Clock: custom-design/ Howard Miller Clock Co., Zeeland, Mich.



ticket offices



Photos: Jason Hailey



client	KLM Royal Dutch Airlines
location	Los Angeles, California
designers	Craig Ellwood Associates
architect	Walter 't Hart, KLM Staff Architect

Design Theory: In remodeling an existing store front to provide airlines ticket office quarters, characteristic Dutch colors (blue and white) and suggestive materials (tile) create a crisply appropriate atmosphere. Aluminum grill work also provides air-conditioning system outlets. Focal point is light mural with jewel-like perforations glowing through colored plastic.

Color Plan: Colorful interior has brilliant posterlike quality—aluminum framing shines around terra-cotta tiled floor; far mural wall is orange, the orange repeated in sofas against gray-stained fir siding wall; blue desks and yellow chairs contrast with stark white wall, the blue repeated in building column on facing wood wall.

doors, windows

Wood Slab Door: General Veneer Mfg. Co., 8652 Otis St., South Gate, Calif.

Glass: Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

Storefront Metal: Acme Metal Molding Co., 1923 S. Los Angeles St., Los Angeles, Calif.

Door Lockset: Schlage Lock Co., 3467 W. Eighth St., Los Angeles, Calif.

Door Hinges: Stanley Works, 784 Lake St., New Britain, Conn.

furniture, fabrics

Desk and Desk-Side Unit: custom-made/ architect-designed/ natural walnut plywood and blue Micarta.

Desk Chairs and Customer Chairs at Desk: yellow and blue-gray/ Herman Miller Furniture Co., Zeeland, Mich.

Sofas and Table: orange upholstery, black steel frames, white Formica top/ Van Keppel Green, 9501 Santa Monica Blvd., Los Angeles, Calif.

lighting

Fixture Over Desks: four 4-ft sq fluorescent tube, plastic-faced/ Gruen Lighting Co., 8336 W. Third St., Los Angeles, Calif.

Ceiling Fixtures: Surface-mounted louvered metal cylinder units, hanging milk-glass cone units/ Gruen Lighting Co.

Wall Bracket Fixtures: Century Lighting, Inc., 521 W. 43 St., New York, N. Y.

walls, ceiling, flooring

West Wall: vertical grain Douglas Fir siding, gray stain-wax/ Samuel Cabot, Inc., 141 Milk St., Boston 9, Mass.

North Walls Behind Mural: 3/8" "Harborite" plastic-faced marine plywood, painted semi-gloss orange/ Harbor Plywood Corp., Aberdeen, Wash.

Entry Closet Wall and Structural Column Facing: blue "Micarta"/ U.S. Plywood Co., 55 W. 44 St., New York 36, N. Y.

Other Walls: plaster, painted/ Pittsburgh Plate Glass Co.

Ceiling: 4' x 4' perforated cement asbestos board over mineral wool sound-absorbing blanket/ Simpson Logging Co., Shelton, Wash.

Flooring: 8" x 4" x 3/4" terra-cotta quarry tile/ The Mosaic Tile Co., Zanesville, Ohio.

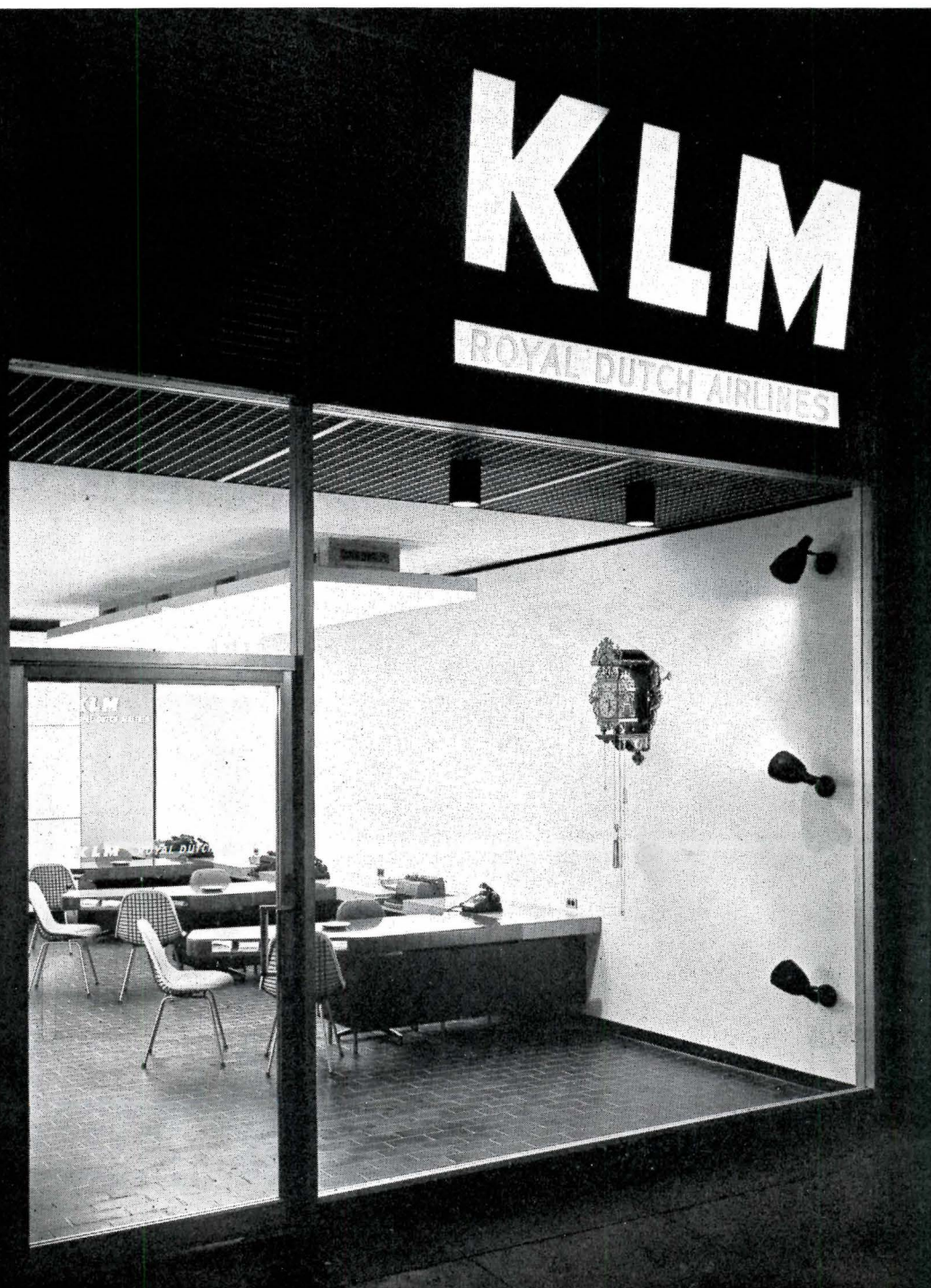
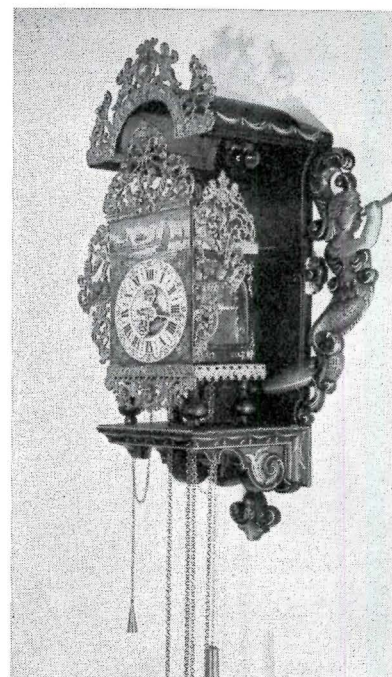
mural, accessories

Light Mural: of 1/4" thick Masonite, with holes drilled to form continent outlines and major ports, airline network pegged into these holes/ back-lighted by 27 fluorescent tube fixtures/ Jan de Swart.

Clock: Dutch antique/ imported from Holland.

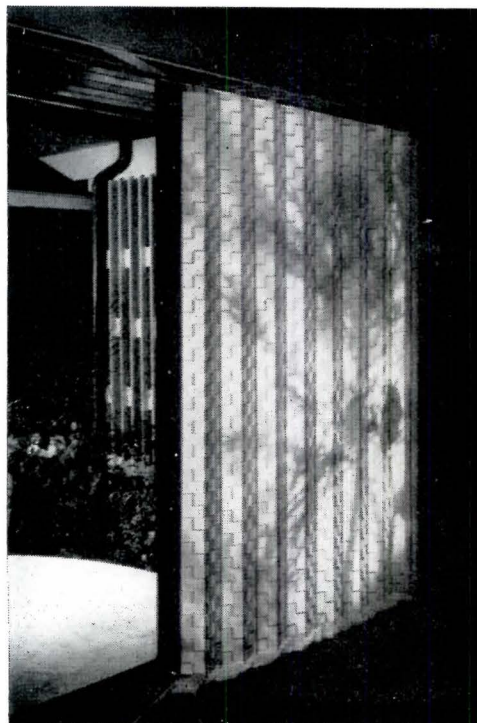
Travel Folder Rack: clear plastic/ architect-designed.

Desk Trays: Knoll Associates, Inc.



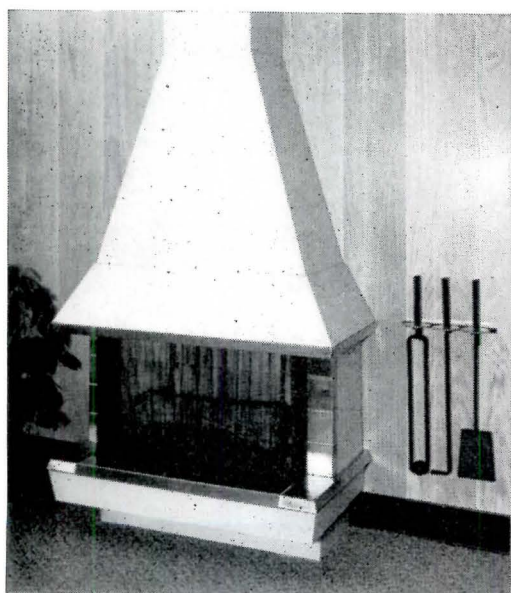
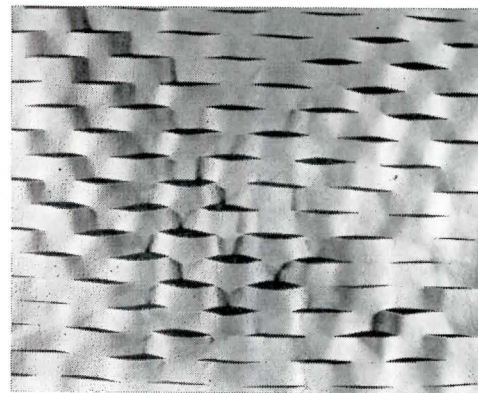
p/a interior design products

Ceramic Tile: (right) "Byzantile"/ mosaic tiles adapted by designer Kenneth Gale from Byzantine originals/ in seven color values, including Pebble White, black, light gray, dark gray, light beige tan, red, light buff/ basic shapes include: diamonds 1-1/16"; squares 3/4", 1-1/16", 1-9/16"; diagonal halves of squares 3/4" and 1-1/15"/ illustration shows wall application in three colors, using squares and diagonal halves/ **The Mosaic Tile Company, Zanesville, Ohio.**



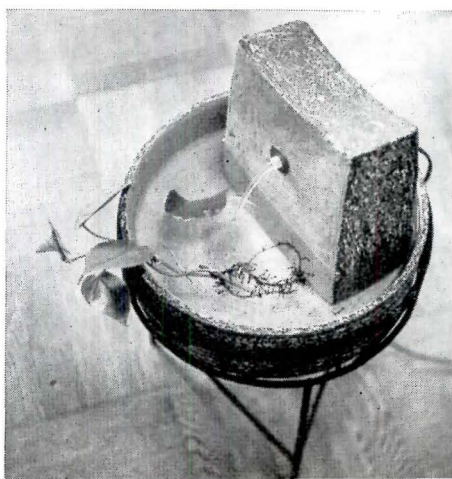
Traverse Screen: (right) molded of semi-translucent "Lucite"/ filters and diffuses sunlight/ three-dimensional pattern creates interplay of light and shadow, permits air to pass through horizontal vents/ folds to one inch of stacking per foot of opened screen/ for use at windows, as room dividers, storage door, wall screen/ high reflective qualities/ available in wide variety of colors/ **Jaylis Sales Corp., 514 W. Olympic Blvd., Los Angeles 15, Calif.**

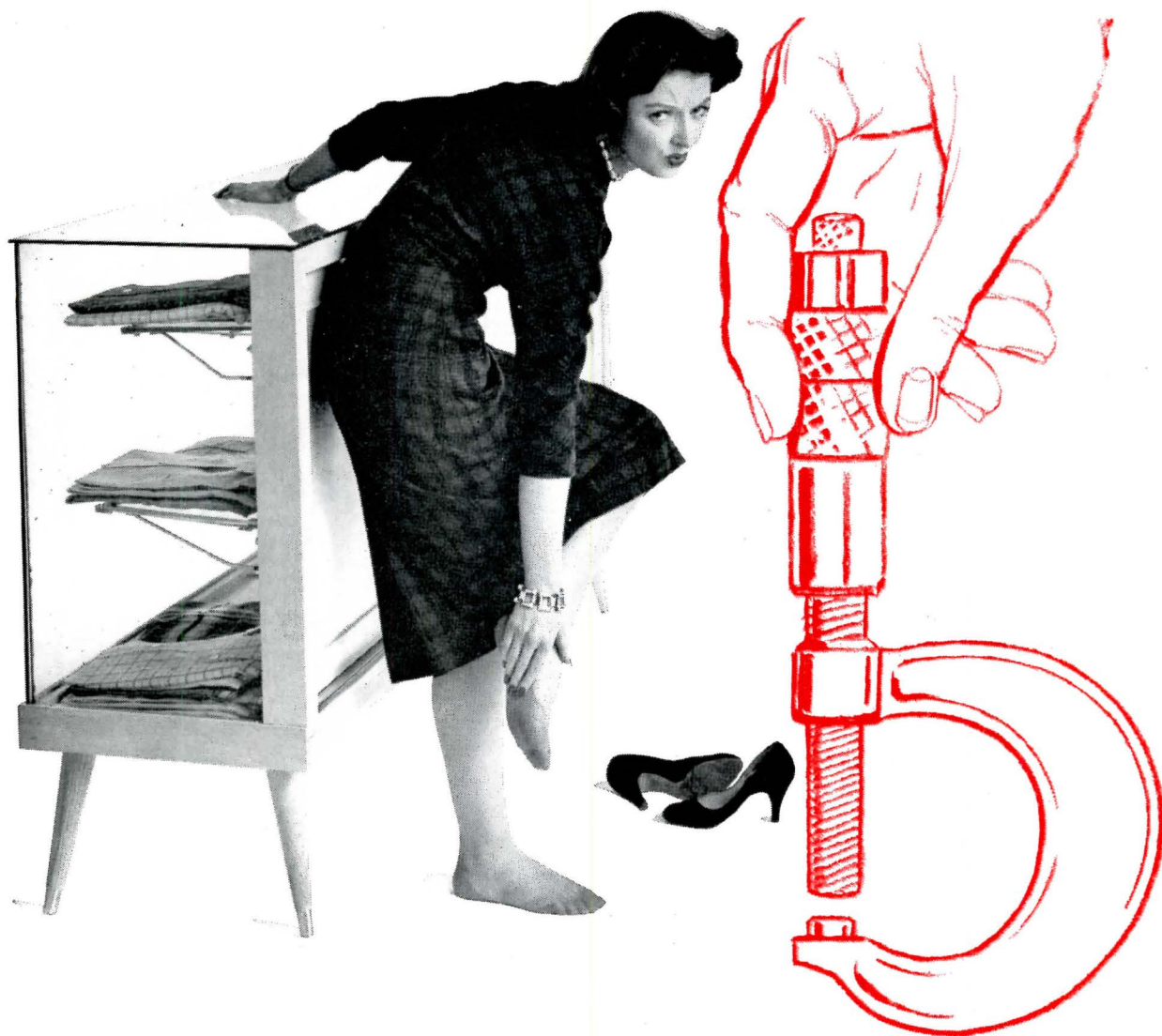
Leather Winner: (below) honeycomb-textured leather, with die-cut slits/ 1957 Design Competition Award winner for designers Earl Koepke and Jack Waldheim of Milwaukee, Wis./ for use in drapery, curtain, or screen treatment/ **The Upholstery Leather Group, 141 E. 44 St., New York 17, N. Y.**



Packaged Fireplace: (above) of corrosion- and heat-resistant materials, including all-stainless-steel flue lining/ Underwriters Laboratories-approved for installation directly against any combustible material/ requires no foundation alterations or masonry/ ceramic hearth kit completes unit/ **Temco, Inc., Nashville, Tenn.**

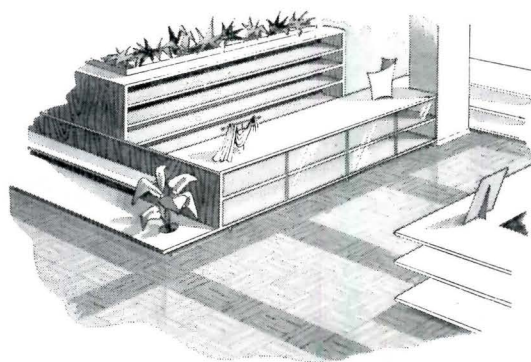
Recirculating Ceramic Fountain: (below) craftsman-sculptured, original ceramic design/ 24" high over-all, in wrought-iron stand/ patent pending plastic pump, producing active recirculation/ plug-in unit, consuming 4 w. of electricity/ for indoor or outdoor use/ **The Fountain Mart, 145 E. 53 St., New York 22, N. Y.**





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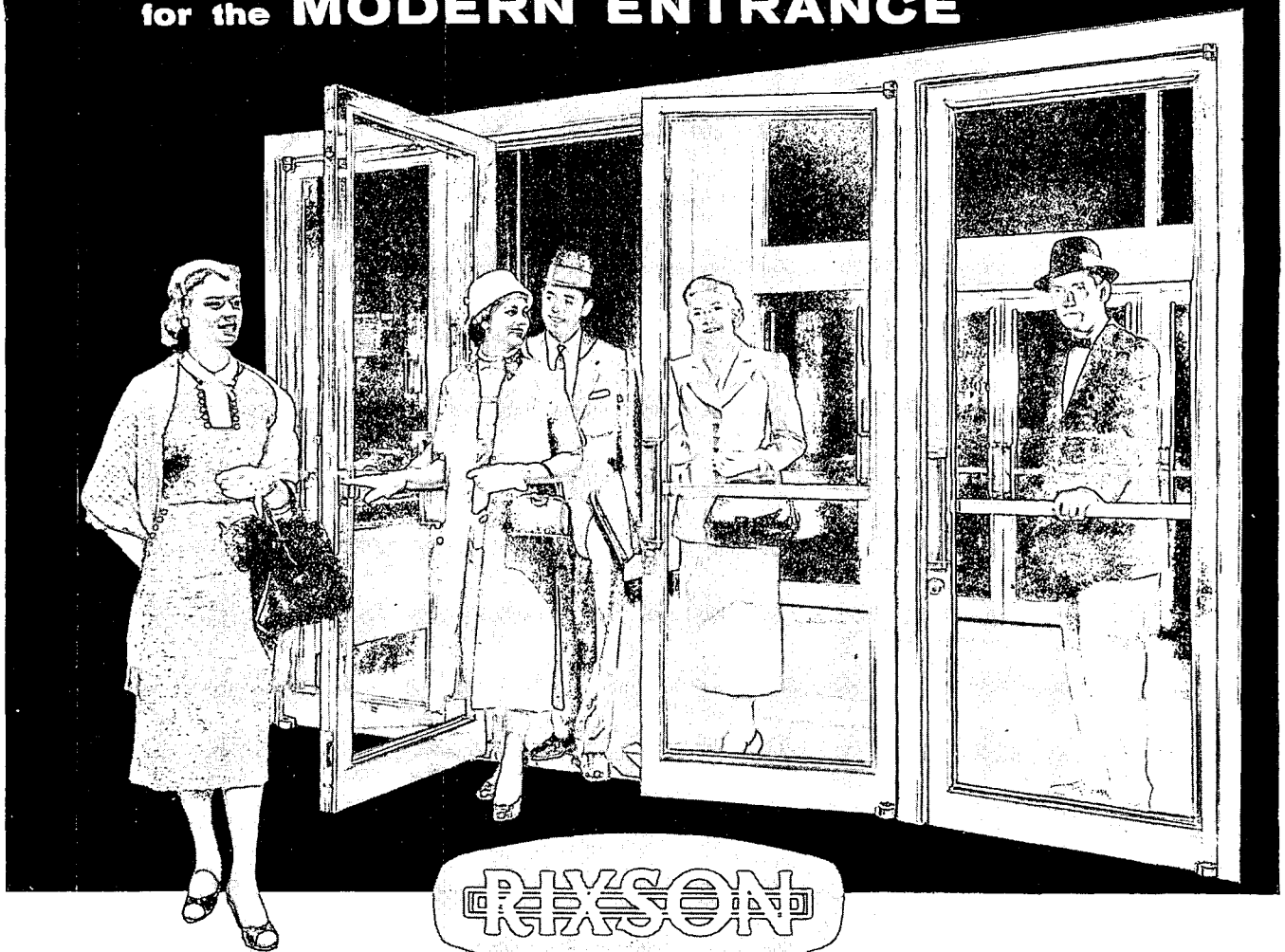


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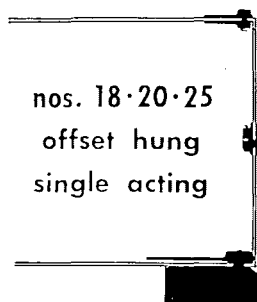
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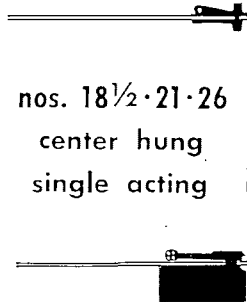
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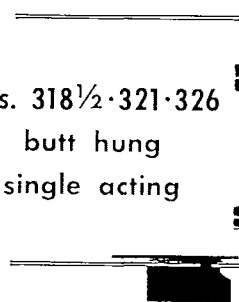
nos. 18·20·25
offset hung
single acting

Allow full unobstructed door opening space and wide door swing to 180°. Has arm locking device for vertical adjustment of door.



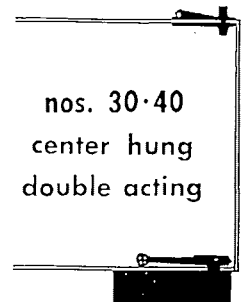
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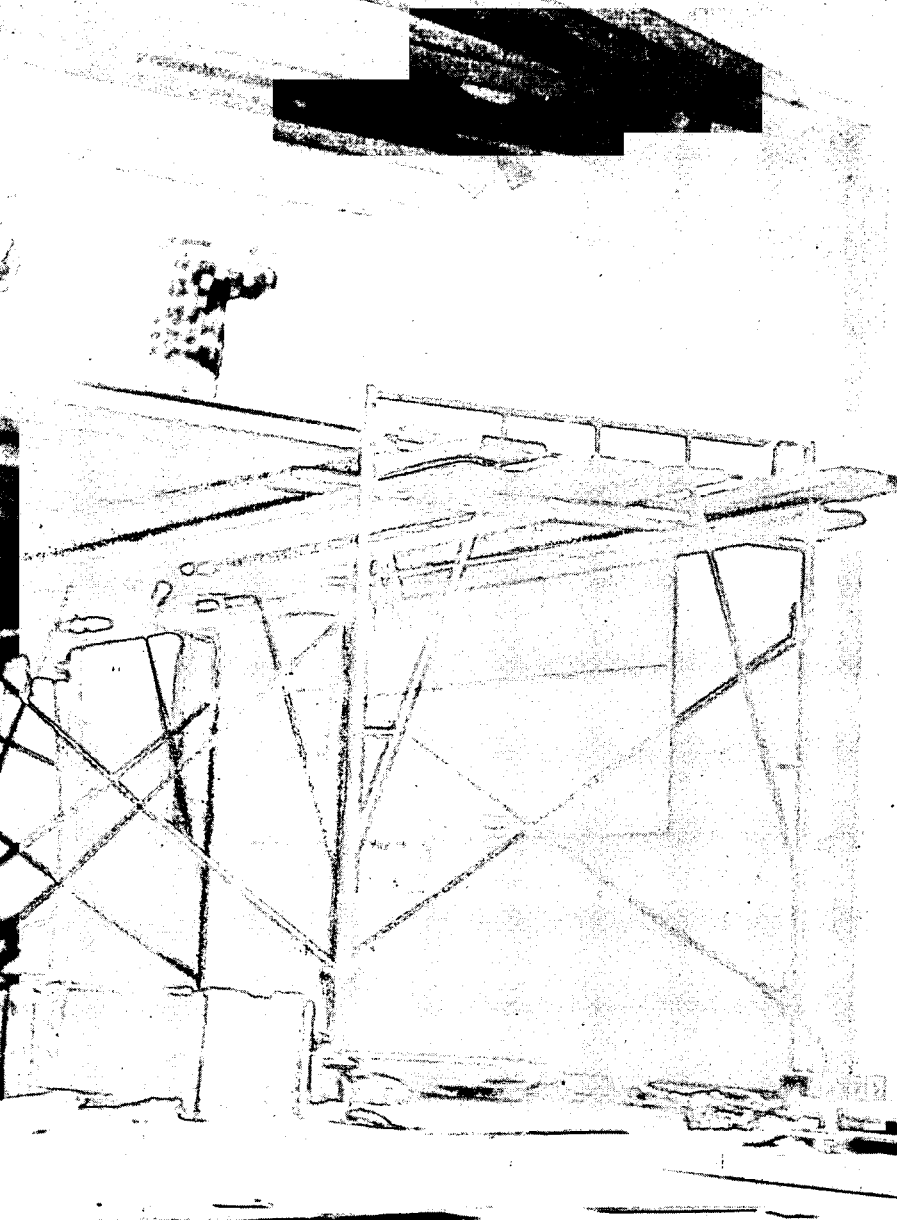
CARSON & LUNDIN

SCULPTOR:

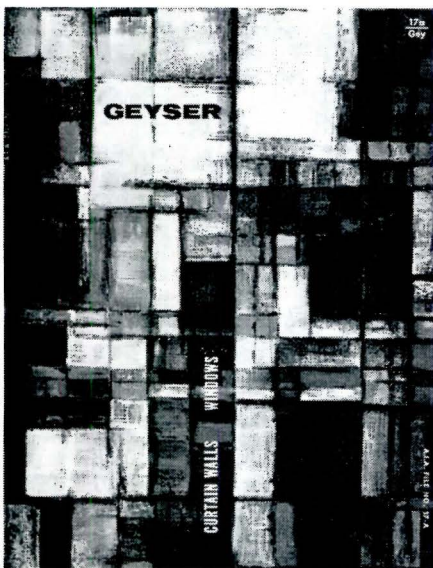
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With the increasing use of curtain-wall construction, numerous systems have been developed. The Geyser Grid System for curtain walls and windows utilizes the single bar for both wind brace and glazing member. Horizontal bars run continuously past outer faces, giving an unbroken line without joints or seals. This brochure contains design features of the system, including data concerning framing, vertical, horizontal members, and ventilator units. Two series—3600 and 6000—are shown with photos of representative installations, drawings, tables. Standard details of components given.

System is adaptable—components may be used in various combinations. Descriptions of glazing method is given, as well as general data for economical designing, architect's check list, and specifications.

277. Geyser Curtain Walls, Windows, AIA 17-A, 20-p. E. K. Geyser Co., 915 McArdle Roadway, Pittsburgh 3, Pa. E. C. D.

Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.

air and temperature control

146. Ceramiduct, 8-p. brochure describes heating duct material for radial, perimeter heating. Material, of vitrified fire-clay, is designed for under concrete floor installation; resists moisture. Diameters, sizes, weight shown by tables, detail drawings. Installation is easy—connections made with special tape; typical plan given. Design information, tables for floor heat loss factor, duct size, register free area included. Installation suggestions illustrated by photo, drawings. System can be adopted to air-conditioning, ventilating systems. Straitsville Brick Co., New Straitsville, Ohio.

147. Power-Pak, 4-p. bulletin describes line of packaged automatic boilers for steam or hot-water heating, hot-water service, in industrial, commercial, institutional structures. Available in 15 to 25 hp for pressure up to 15 psi, unit is equipped with oil or gas-firing burners, is insulated and fire-tested. Dimensions, weights, ratings given. Illustrations of oil and gas-fired units. Orr & Sembower, Inc., Morgantown Rd., Reading, Pa.

148. Inductor Air Conditioners, 16-p. catalog is guide to line of air conditioners for perimeter air conditioning of multi-story buildings. Features of individual units, using conditioned air from central source, include: individual room temperature, humidity control; no moving parts in conditioned space; low sound level; no return-air ducts required; no electrical connections, filters in unit; adaptable to old or new buildings. Vertical or horizontal units available. Section for unit

selection has table of basic unit ratings, primary-air rating curves, heating and cooling capacities, pressure-drop curves, coil-water friction values. Use of data illustrated by step-by-step example. Detail drawings, specifications, accessory dimensions, installation information given. American Blower Div., American-Standard, Detroit 32, Mich.

149. Residential Zone Control, AIA 30-E, 28-p. manual describing advantages of zone control in hot water and steam-heated residences. Zone control is advantageous for spread-out floor plan, two-levels, various types of wall construction, large window areas, or different methods of heat distribution. Control lends itself to varying outdoor and indoor conditions, home modernization—offers freedom of design and added comfort, suited to individual situations. Various zone arrangements given, as well as three basic systems—control of zone valves, zone circulators, two-pipe steam—and thermostatic controls. Electronic moduflow system of control featured. Discussion of operations, features, guide specifications included. Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., So., Minneapolis 8, Minn.

construction

275. O'Neal Steel, 32-p. booklet describes organization—fabricating and warehouse divisions. Photos illustrate parts of fabricating process, equipment used, actual installations and framed structures. Variety of designs, particularly for industrial buildings, shown. Services offered are listed. O'Neal Steel, Inc., 745 N. 41 St., Birmingham, Ala.

276. Structural Glued Laminated ★ Larch, AIA 19-K, 12-p. file folder gives standard specifications and design for glued laminated Larch—specially prepared wood laminations with grain

longitudinally parallel. Working stresses, modification of stresses described with tables for various conditions. Specifications for lumber, adhesives, end joints; fabrications, finished sizes given. Standard-appearance grades discussed. Western Pine Associations, 510 Yeon Bldg., Portland 4, Ore.

278. Aluminum Curtain Walls, 12-p. booklet deals with 1958 Ualco curtain-wall applications. Prefabrication advantages featured—standard components aid erection. Although lightweight, wall insulates as well as thicker material. General specifications for awning curtain wall, with installation, assembly details. Intermediate projected curtain wall also described with details of mullions, drawings. Photos of actual installations. Freedom of design, easy maintenance, various finishes featured. Southern Sash Sales & Supply Co., Inc., 818 20 St., Sheffield, Ala.

279. Engineered for Design—Aerobat Curtain Walls, 8-p. booklet describes complete package unit of aluminum windows, window wall, curtain wall, and various entrance treatments. Discussion of intermediate projected windows which may be used individually, as one-story continuous windows, or integrated component of curtain wall. Feature is continuous wool pile seal to minimize air infiltration. Monumental projected windows have 1/8" wall thickness, can be accessory to curtain-wall system. Construction details given as well as specifications for window series. Drawings of single story, multistory curtain walls. Aerobat Industries Inc., Box 6823, Dallas, Tex.

How to Design Pole-Type Buildings, 68-p. guide by Donald Patterson, for planning, engineering this type of structure. Complete engineering, design data on uses of pressure-treated round and sawn timbers for commercial, industrial buildings.

Line drawings, text give information on computing live, dead, wind loads and stresses for all components. Embedment chart, tables included for calculating embedment depths. Typical examples illustrated, explained with line drawings, construction details. American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill. \$1.50

280. Tensioning Materials for Prestressed Concrete, 16-p. booklet provides information on various types of tensioning materials used in prestressing concrete. Method of tensioning for uncoated stress-relieved strand for pretensioned bonded design described; element is 7-wire strand—properties or strand included. Similar information set forth for post-tensioned design, using galvanized strand. Details for post-tensioned strands for end fittings, bearing plates, typical jacking equipment. Method of prestressing slabs on grade illustrated. Uncoated stress-relieved wire uses and properties shown by tables and photos. Construction Materials Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

doors and windows

327. Marcolight Skylights, AIA 12-j, 10-p. booklet for aluminum and glass-fiber panel skylights for commercial, industrial installation. Types of skylights available described by photo, detail drawings, construction features, specifications, size tables. Models include series for over-curb construction, self-contained roof and curb flange, monitor type. Insulation value stressed, with construction detail drawing as illustration. Roof panel shown. Special and low-priced skylights described. Photos of installations. The Marco Co., 45 Greenwood Ave., East Orange, N. J.

328. Nudor Aluminum Sliding Glass Doors, 8-p. brochure concerns three main series of sliding glass doors—d'Cor, Nudor, Hi-Lo. Each described by detail photos; installation detail drawings for frame, stucco, brick veneer, concrete construction; drawings of components, specifications. Size and glass schedule table included for three types. Special features of each shown. Nudor, 7326 Fulton Ave., N. Hollywood, Calif.

329. Working Glass, 6-p. folder
★ discusses properties of colored plate glass. Three hues shown, with transmission analysis chart and data. Various

colors, densities available. Glass offers control of light, heat, glare—gives possible design opportunities. Folder shows photos of actual installations in recently completed structures of note. Projected Air Force Academy installation pictured. Franklin Glass Corp., 130 W. 31 St., New York 1, N. Y.

330. Plexiglas Dome Skylights, AIA 12-J, 20-p. booklet provides information for specification of skylights made from acrylic plastic and gives data for calculation of daylighting values for designing dome skylight systems. Basic components include formed dome, metal inner or curb frame, outer frame, neoprene gasket, rivet or screw fastener, condensation gutter, expansion-contraction allowance. Various types of domes and accessories illustrated. Brightness, features, building-code requirements, installation discussed. Lumen input method of calculating requirements detailed as well as complete calculations. Tables, details used to illustrate data. Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

electrical equipment, lighting

436. Current Literature on High Frequency High Voltage Fluorescent Lighting, 48-p. booklet contains reprints of four articles appearing in July 1957 *Illuminating Engineering*, covering high-frequency, high-voltage lighting installations. Specific titles are: "Elements of High Frequency Fluorescent Lighting"—J. H. Campbell; "Applications of High Frequency Fluorescent Lighting"—Q. D. Dobras; "Report on High Frequency Operation"—R. H. Horner; "Converter Equipment"—Shelley Krasnow. All illustrated by photos, drawings, tables. Included in catalog is list of lighting equipment for 400 to 600 volt—840 cycle operation, shown by detail drawings, descriptions; engineering data for luminaries. The Wakefield Co., Vermilion, Ohio.

437. Lab-Volt, 4-p. booklet discusses unit power package for high school science laboratories. Small unit can be built into laboratory table—gives safe, convenient power—leaves table top clear. Outlets for 120-v AC (at 10 amperes), 0 to 12-v AC and DC (at 2 amperes) given, with voltage control indicator. Face panel measures 8-3/8" wide, 3-3/4" deep. Voltage can be adjusted individually. Specifications given. Buck Engineering Co., Inc., Freehold, N. J.

438. Lighting Equipment, Multi-function Ceilings, 60-p. catalog for contractors describes complete line of equipment. Thirteen basic models and various combinations described as to material, design, color patterns available. Details, tables given for reflectability, weight, etc. Special attention to Wakefield Ceiling '58 line, recessed equipment. Prices given. The Wakefield Co., Vermilion, Ohio.

439. Contemporary Lighting, 20-p. ★ booklet includes types of recessed spot, flood, downlight, dome, directional, and general lighting series available, as well as specialized lighting equipment. Each type pictured by photo, described by material data, tables, detail drawings. Installation suggestions, photos given. Hospitality fixtures featured, with specifications, adaptability stressed. Swivel series, indirect fixtures shown. Lighting tables, details, advantages of each pointed out. Kurt Versen Co., 4 Slocum Ave., Englewood, N. J.

440. Directo-Lens, AIA 31-F-23, 4-p. booklet concerning new line giving accurate prismatic light control. Available in clear crystal or with inner surface acid-treated for more diffused light. Advantages claimed are higher intensities, less glare in visual range, good over-all appearance. Photos, dimension tables for square, round lenses. Six photometric data sheets included—data based on outside testing results. Diffusers also pictured. The Phoenix Glass Co., Monaca, Pa.

441. Paragrid Tile, AIA 31-F-2, 6-p. brochure features new illuminated ceiling, with suspension bi-planar construction. Molded of specially pigmented polystyrene, bi-planar tile construction enables wide spacing of lamps and increased diffusion. Detail drawings of components, sample layout, specifications included. Tile available in modular 16" x 16" units. Easy installation and maintenance claimed; tile usable in any lighting installation. J. A. Wilson Lighting and Display Inc., 516-517 G. Daniel Baldwin Bldg., Erie, Pa.

finishers and protectors

544. Paint, AIA 25, 28-p. architect's specification manual aids selection of finishes for all surface conditions. Selection chart gives description of painting sys-

(Continued on page 177)

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277	436	546	806	
278	437	653	807	

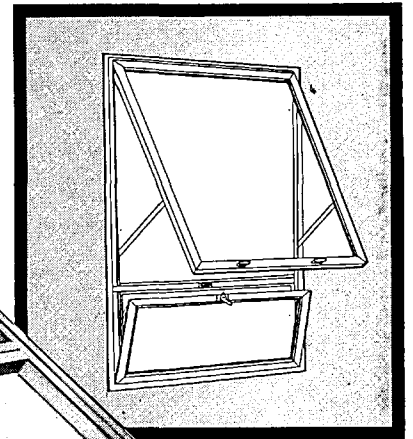
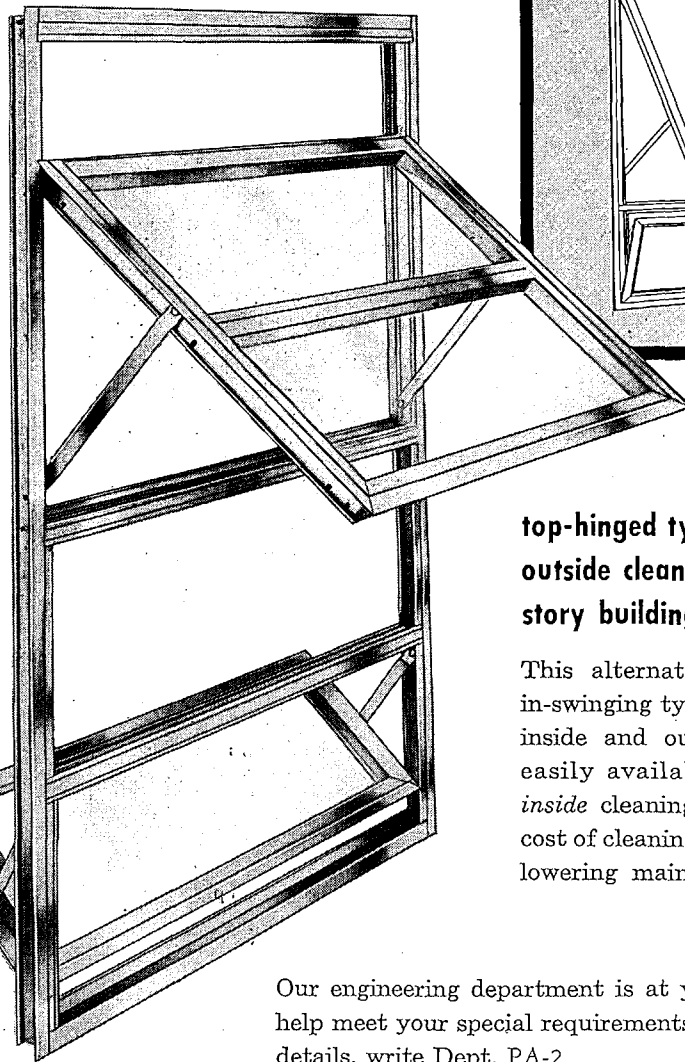
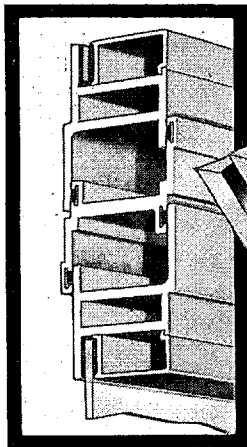
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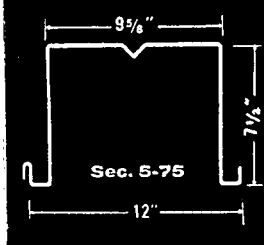
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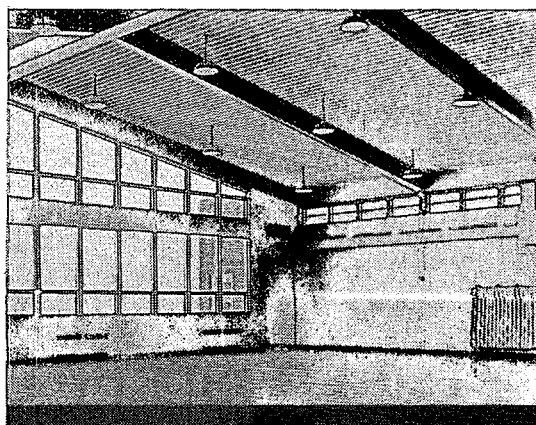


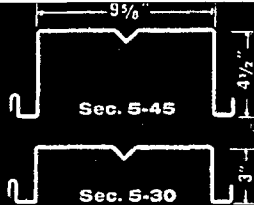
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H. H. ROBERTSON COMPANY
2405 Farmers Bank Building • Pittsburgh, 22, Pa.

In England—Robertson Thain Ltd.,
Ellesmere Port, Cheshire

In Canada—Robertson-Irwin Ltd.,
Hamilton, Ontario



p/a manufacturers' literature

(Continued from page 169)

tems, collated with materials, surfaces, types of finishes. Various painting methods are evaluated, with new paint vehicle formulations stressed. Products are described by methods of application, drying times, calculated coverages, thinners necessary. Detailed specifications for interior, exterior applications given. The Glidden Co., 2080 W. 110 St., Cleveland 14, Ohio.

545. P. A. R., AIA 19A-3, 4-p. bulletin, discusses water-repellent finish for wood. Two types—pigmented for reddish brown woods, and clear for natural appearance. Qualities of finish: penetrates wood, resists moisture, protects against discoloration, does not blister or peel. Economy, durability claimed. Protection Products Mfg. Co., 2305 Superior Ave., Kalamazoo 99, Mich.

546. Koldrock, 2-p. bulletin describes protective coating for low-temperature insulating materials. Coating is all-mineral, suited particularly for refrigerated or cold-storage rooms. Surface after application is smooth, clean, seamless, hard. Said to be fire resistant, protector will meet local sanitary and fire codes. Wide range of colors available. Installation and mixing instructions outlined. Selby-Battersby & Co., 5220 Whithy Ave., Philadelphia 43, Pa.

insulation

653. Certified Adequate Insulation Manual, 12-p. guide to home insulation for 100% year-round air conditioning, in new homes or for reinsulating existing structures. Certified Adequate Insulation is 6" mineral fiber in roofs, 3" in side walls, 2" under exposed floors. Conductance ratings given; recommendation tables. Four typical houses in different parts of country described, cost for insulation estimated. Factors affecting insulation detailed—safety features listed. United States Mineral Wool Co., Stanhope, N. J.

sanitation, plumbing, water supply

749. Byers PVC Pipe, 30-p. catalog, discusses unplasticized polyvinyl chloride pipe for multiple usage. Two types: one of pure PVC resin with lubricants, stabilizers for processing; second type has same characteristics with addition of synthetic rubber modifier for higher impact resistance. General properties, advantages, of both listed. Suitable for plant service, water lines, petroleum products, marine installations. Corrosion resistance ratings charted for both types, with low-carbon steel, three types stainless, cast iron, aluminum, various metals with 383 inorganic and organic chemicals. Other charts give mechanical, thermal, electrical properties; wall thicknesses, weights, burst pressure and recommended working pressures. Installation data includes cemented joints, hot-air fusion welding, threaded connec-

tions, bending, etc. Engineering Service Dept., A. M. Byers Co., Clark Bldg., Pittsburgh, Pa.

750. 1958 Dole Valve Catalog, AIA 30-C-24, 14-p. release shows complete line of plumbing, heating control valves. Air valve operation explained, types illustrated, for automatically fired and hand-fired one-pipe gravity steam heating systems, vacuum valves, automatic hot-water air-valves, water mixers, relief valves, flow-control valves, solenoid valves and pressure-relief valves. Specifications given, data on installation. Several detail drawings shown. The Dole Valve Co., 6201 Oakton St., Morton Grove, Ill.

751. Lead for Modern Plumbing, 4-p. leaflet gives data on installation methods for lead pipe, fittings, in commercial, hospital, residential buildings. Advantages of lead listed: durability, flexibility, smooth inner bore, bonded joints, low cost. Types of installation described: interior plumbing, chemical laboratory drainage systems. Photos data on service pipe, shower pans, calking lead given. Architectural Dept., Lead Industries Association, 60 E. 42 St., New York 17, N. Y.

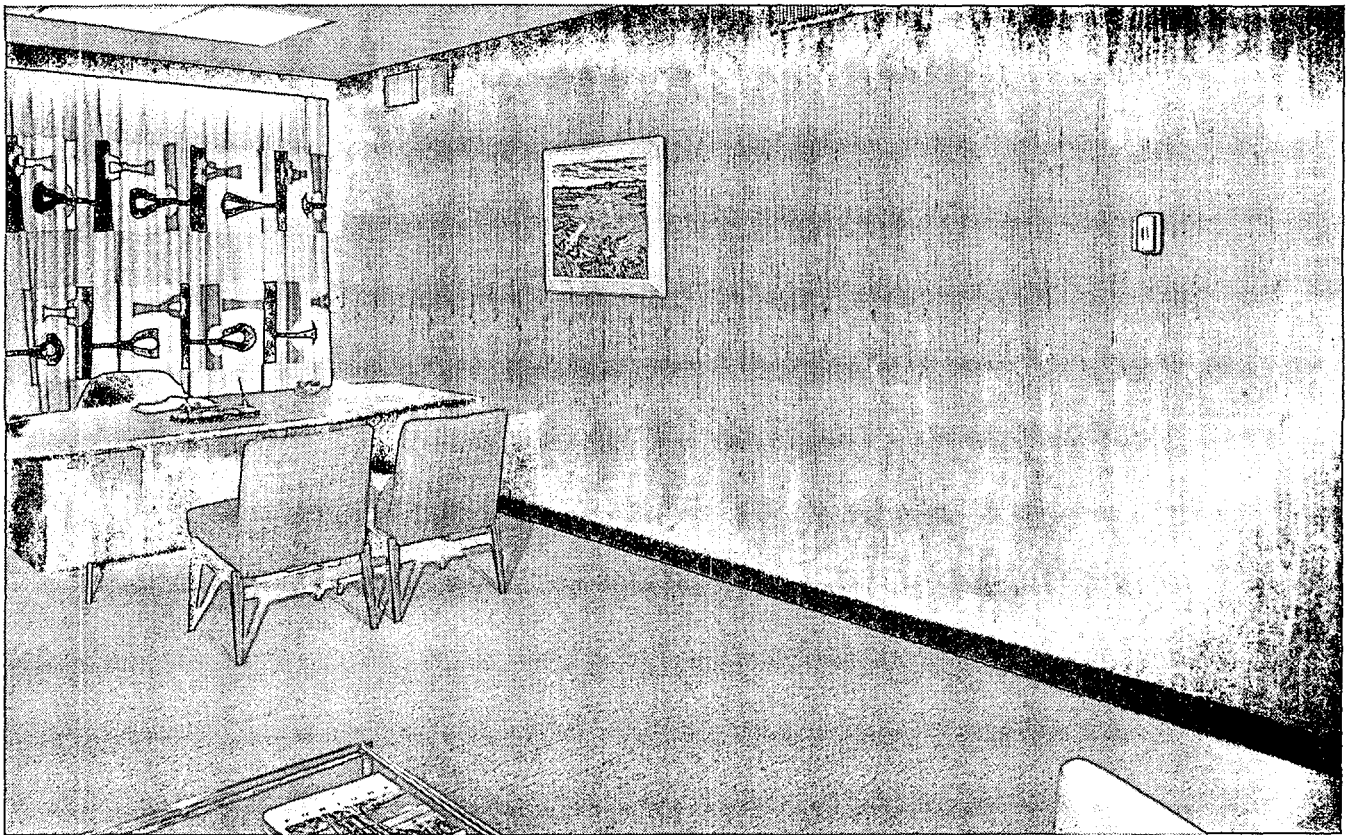
752. Streamline Plumbing and Heating Products, AIA 29-B-4, 52-p. catalog giving engineering data and dimensional information for copper tube, solder-type fittings and valves. Details listed for copper water tube, cast solder-type fittings, forged solder-type fittings, cast valves, cast drainage fittings, flanged fittings, and extra heavy wrot fittings; heating specialties. Soldering instructions and accessories, tools also listed. Each product illustrated by photos and detail drawings. Mueller Brass Co., 1925 Lapeer Ave., Port Huron, Mich.

specialized equipment

804. Superior Sheet Metal Fabrication, 4-p. brochure describes line of payment depositories and ticket-sorting racks. Envelope holders obtainable for interior or exterior use—exterior type in two styles. Wall payment depositories, 16-gage sheet steel units with cast bronze face plates, available in 16" or 30" high units for 10 3/8" wall thickness. Extension collar can be supplied. Door depositories for 2 1/4" thicknesses listed. All units in light gray, baked enamel finish; standard face plate is bronze, can be supplied in chrome or brushed aluminum. Ticket sorting racks have heavy-steel frame, two-hinged assemblies removable for storage—all compartments clearly numbered. Appearance said to be like metal office furniture. Wayne Engineering Corp., 26 Essex St., Hackensack, N. J.

805. Walkway Covers, AIA 12-R, 4-p. brochure describes prefab walkway covers for schools, hospitals, office buildings,

(Continued on page 180)



Weldwood walnut paneling—adds distinctive spirit to this office in Investors' Planning Corp., New York. Architects: Joseph & Vlodeck

A wood-paneled office speaks worlds about its owner—and its designer

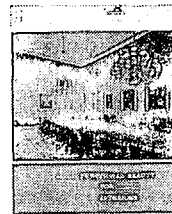
Especially in business, first impressions *do* count. And for a wonderful first impression that will last, nothing does so much for an office as luxurious real wood paneling—guaranteed for life by Weldwood.

Here are three ways Weldwood helps you give offices the warmth and beauty of wood paneling—warmth and beauty that grow through the years, with only an occasional waxing. **Weldwood Paneling**—over 70 types and finishes of choice woods in big panels that make installation quick and easy.

Weldwood Flexwood®—real wood veneers, cloth-backed, that can be hung on any smooth surface—curved or straight.

Weldwood Movable Partitions—give the advantages of wood paneling, yet permit you to change office layouts overnight.

Weldwood Nakora® paneling (Oriental ash) lends a friendly atmosphere to interiors of new Howard Johnson motor lodge at the Breezewood Interchange of the Pennsylvania Turnpike. Architect: Carl Koch & Associates.



FREE WELDWOOD BOOKLET with more than 100 photographs . . . "Functional Beauty for Business and Institutional Interiors." Write for your copy. We will be glad to have a Weldwood Architects' Service Representative consult with you—no obligation. United States Plywood Corporation, Dept. PA 2-58, 55 W. 44th St., New York 36, N. Y.

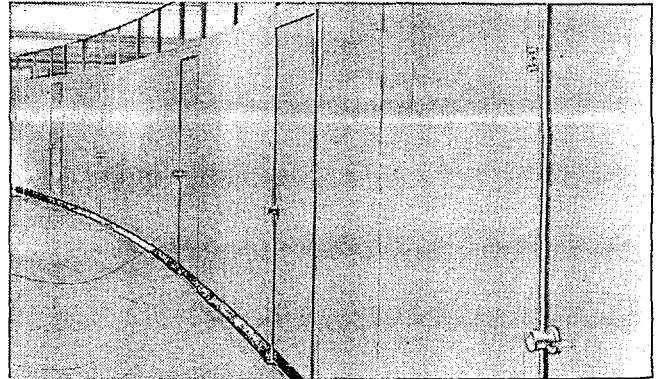


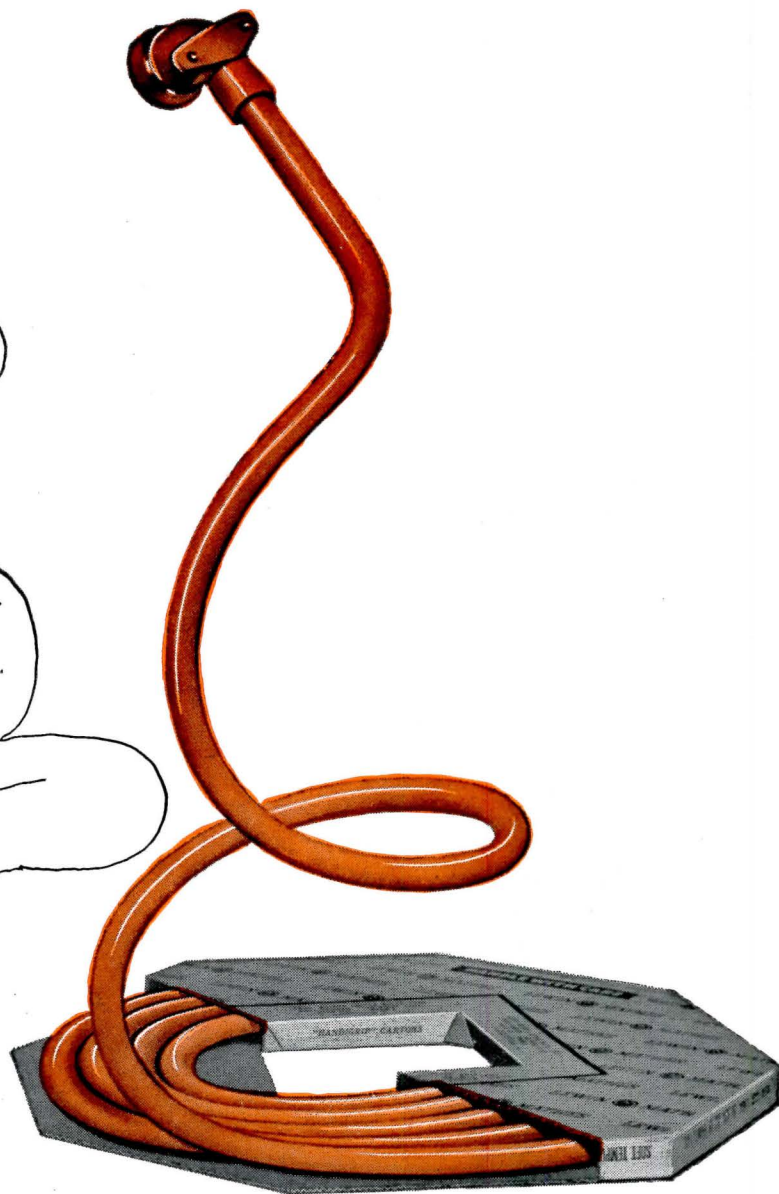
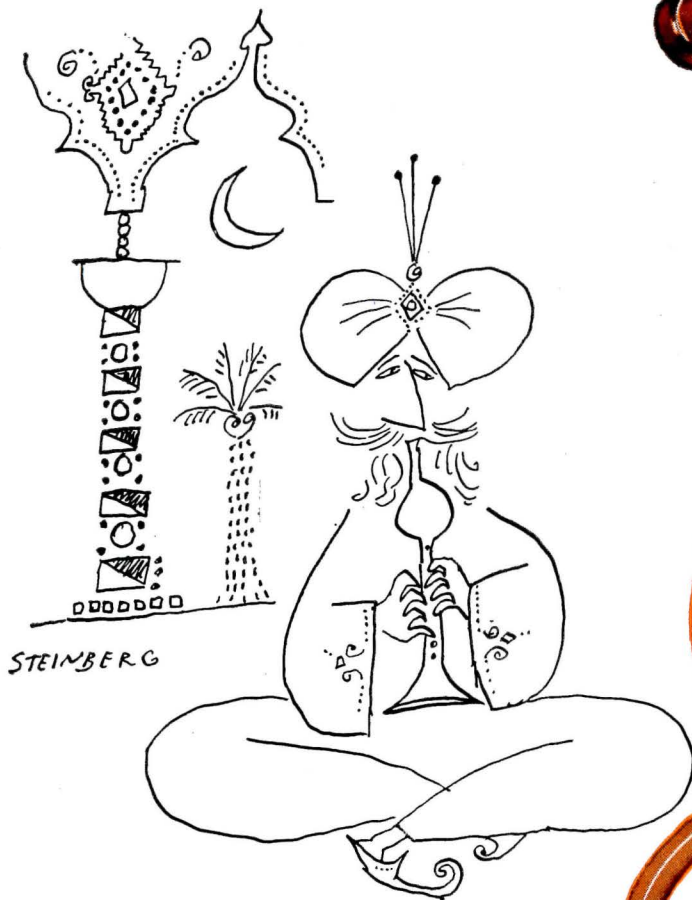
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Offices in 111 principal cities in the United States and Canada

Weldwood birch movable partitions, installed with ½-inch clearance below luminous ceiling, follow the curve of this corridor in the new home office of Medusa Portland Cement Company, Cleveland, Ohio. Arch.: Ernest Payer.





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discipline

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COPPER AND BRASS TUBE PIPE AND ROD
DIVISION OF CERRO DE PASCO CORP.

(Continued from page 177)

motels, civic centers. Framing is cold-formed heavy-gage steel; ribbed roof sheets; finish of fascia—galvanized or baked-on alkyd enamel. Specifications detailed for standard parts available; load carrying table given. Special attention to Continental Carport line—photos of possible installations. Childers Mfg. Co., 3620 W. 11 St., Houston 8, Tex.

806. The Vacuslot System, 4-p. booklet concerns centrally located vacuum producer and dirt separator cleaning system. Piped

throughout building, having flush-mounted inlet valves, system gives speed of dry-mopping, sanitation of vacuum cleaning. Dirt is pushed to vacuslot and sent out through piping. Photos show operation for cleaning erasers, hand dusters, dust mops. Typical plan view shown. Possible uses, specifications, suggested tubing sizes included. The Spencer Turbine Co., 486 New Park Ave., Hartford, Conn.

807. Classroom Equipment, AIA 29-EI-6, 35-B-4, 4-p. catalog shows complete line of

all-steel, modular, mobile equipment for school use. Sinks, storage wardrobe, mobile cart units. Various sizes, heights, available. Color finishes obtainable for sliding doors where used. General specifications, color chart given. School Equipment Mfg. Corp., 46 Bridge St., Nashua, N. Y.

808. A New World of Play, 32-p. booklet of modern playground equipment. Sculptural forms in weather-proofed materials: galvanized tubular steel, glass fibers, cast stone, aluminum, concrete. Shapes of animals, houses, walls, flying saucers, amphitheaters, provide exploration possibilities, expand play values, and hold child's interest. Attractive brochure contains photos of many forms; specifications; plans. Play Sculptures, Inc., 5 University Place, New York 3, N. Y.

809. Time Saving Tips for the Draftsman and Engineer, 40-p. booklet contains 59 shortcuts to speed drafting and computation work. Compiled from suggestions of engineers and draftsmen, these tips cover drafting shortcuts, engineering data ideas, board timesavers, and calculating methods. Most suggestions illustrated by diagram or drawing. New approaches to old problems featured. Frederick Post Company, 3650 N. Avondale Ave., Chicago 18, Ill.

810. Plaques and Letters for Building Façades, 8-p. booklet describes tablets available, with different types of lettering, in bronze, aluminum, stainless steel, porcelain enamel, nickel silver, galvanized iron. Borders pictured, installation details given. Standard letter styles, including new Fascia series, shown. Colored enamel available. Photos of installations; cast, fabricated letters and installation methods described. United States Bronze Sign Co., Inc., 574 Broadway, New York 12, N. Y.

surfacing materials

973. New Formica Idea Kit for Architects, folder contains information concerning various uses of laminated plastics. Kit includes booklet, "Formica Commercial Interiors," showing application of plastic in commercial and industrial buildings—featured is new process which allows patterns to be silk-screened into material; swatch-book of new colors and patterns available; residential installation folder; vertical surfaces folder explaining technological advances in adhesive development; AIA 35-C-12 file informing of preparation and installation of tub-shower wall. Formica Corp., 4614 Spring Grove Ave., Cincinnati 32, Ohio.

interior furniture

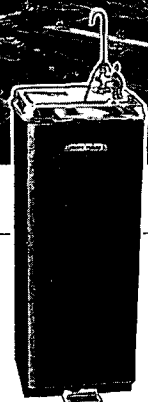
71. The Lunning Collection, 48-p. catalog of furniture in Scandinavian collection. Emphasis is on both utility and comfort. Collection includes works of such designers as Finn Juhl, Hans J. Wegner, Borge Mogensen. Types of furniture includes pieces suitable for home or office use—tables, chairs, etc. Several pages devoted to lamps, fixtures. Price list included. Frederick Lunning Inc., 667 Fifth Ave., New York 22, N. Y.

In St. Louis

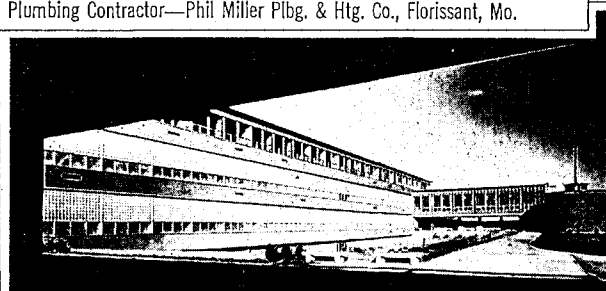
it's *Halsey Taylor*



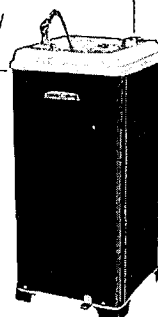
Masonic Home—Architects: Kenneth E. Wischmeyer, St. Louis
Plumbing Contractor—Phil Miller Plbg. & Htg. Co., Florissant, Mo.



Stainless steel
top coolers,
shown, were
specified



Bishop DuBourg High School—Architects: Murphy & Mackey
Plumbing Contractor—J. Sheehan Plbg. Co.



Porcelain top
coolers, shown,
were specified

In St. Louis, as in all of the nation's metropolitan centers, Halsey Taylor is the practical specification for drinking-water equipment. Whether it's a skyscraper or an institution, a school or a church, building authorities know they can rely on the unfailing health-safety and everyday dependability of Halsey Taylor fixtures. Find out how Halsey Taylor can best meet your building program.

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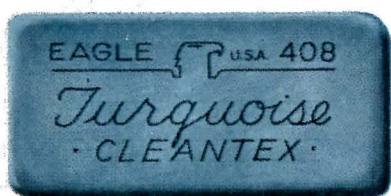


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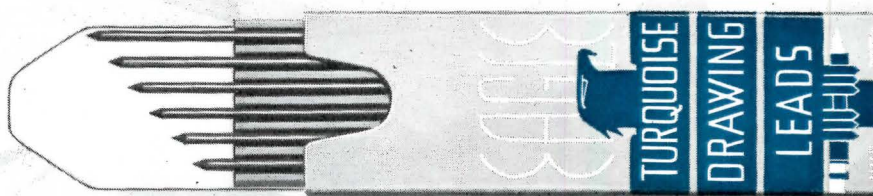
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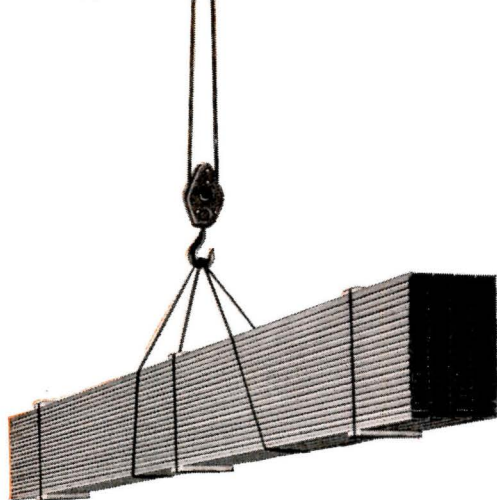
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Milcor's prime finish withstands rough handling

Shipping, storage, and erection can damage ordinary factory-applied prime paint. And, as you know, a finished paint job can be no better than the prime coat.

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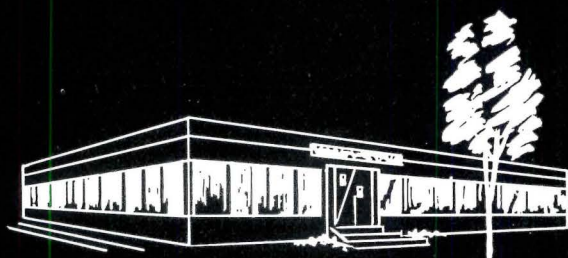
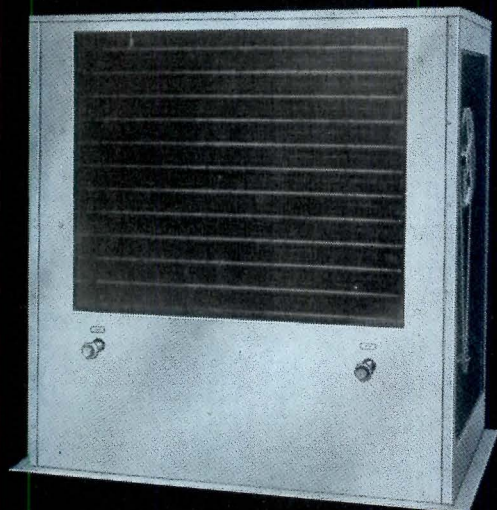
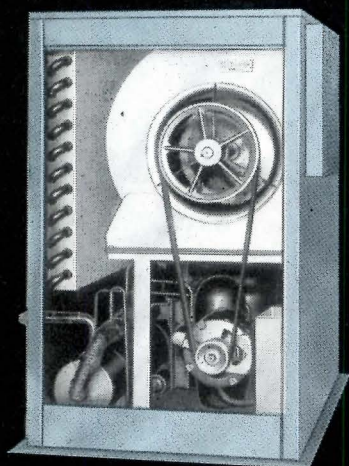
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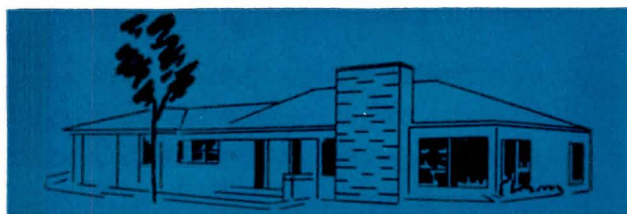
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REMOTE CONDENSING UNIT ASSEMBLIES

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'ARPC' AIR COOLED PACKAGE CHILLERS are designed primarily for residential and light commercial air conditioning applications. Furnished with 2, 3 or 5 HP compressors, Inner-Fin air cooled condensers, water chillers, superheaters and all necessary controls. Chiller is of patented Inner-Fin construction with all copper and brass water passages, completely eliminating the rust problem.

'RCU' REMOTE CONDENSING UNIT ASSEMBLIES are designed for use with remote direct expansion coils and consist of 2, 3 or 5 HP compressors, Inner-Fin air cooled condensers, superheater and all necessary controls.



ALL UNITS FEATURE:

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Superheater-Heat Interchanger of exclusive Inner-Fin construction which combines the advantages of the heat interchanger with the additional advantage of a superheater—insuring full use of the evaporator surface for cooling. Additional liquid subcooling improves overall system performance.

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Request Catalog No. 8027 containing complete specifications.

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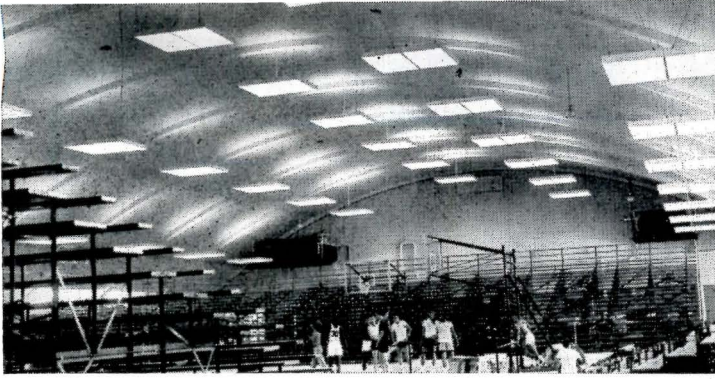
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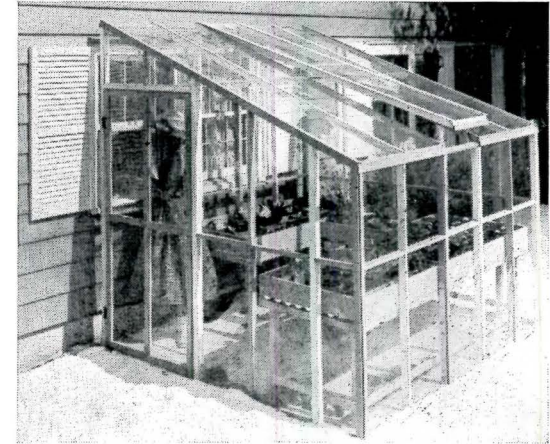
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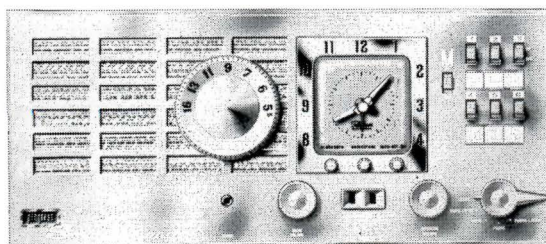
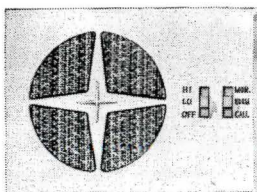
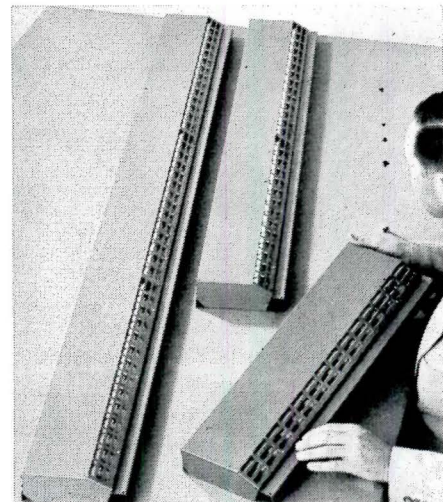
Fifty special 8' x 8' units, operating on 600-v, 400-c power system, provide 60 to 65 ft-c initially 18" above floor for field house (above). This 400-c system produces higher illumination levels at lower costs; requires smaller ballasts; reduces fixture weight; uses lower-cost distribution system; and allows less heat loss at fixture—as compared with 60-c system. Edwin F. Guth Co., St. Louis 3, Mo.

New perimeter and cavity-wall insulating material of expanded polystyrene—1" thick, 2' wide, and 8' long—has three prominently marked striations cut the length of each board at 3, 12, and 20 inch marks across its width (below). This allows installer to easily snap off widths of 3, 4, 8, 9, 12, 17, 20, and 21 inches, as well as utilize the original 24" width. The Dow Chemical Co., Midland, Mich.

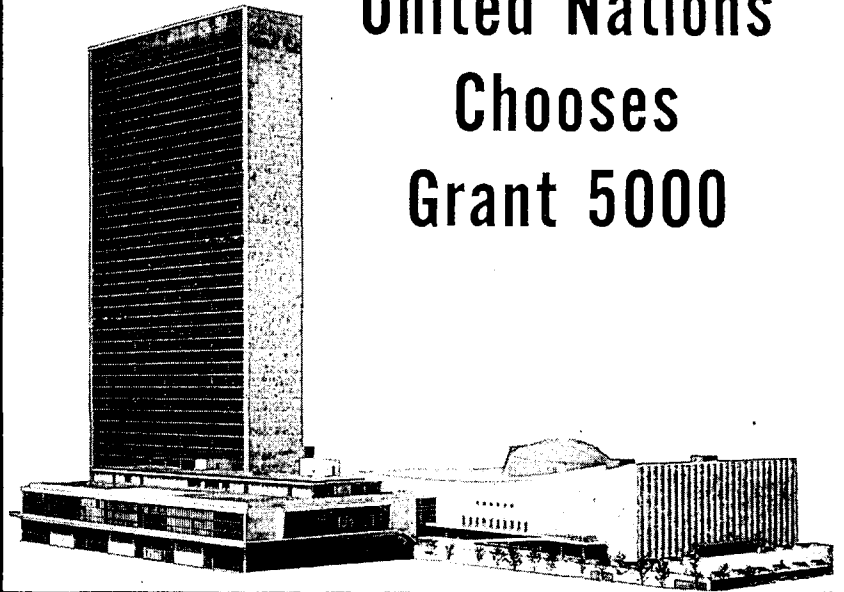


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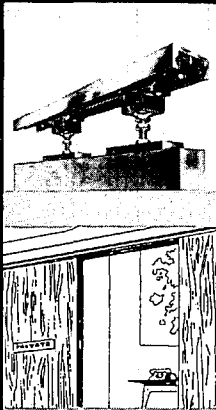
Radio-intercom unit provides two-way communication between a master unit and as many as six remote units, and between the remote units themselves (below). Master includes radio which may be heard, as required, at any or all intercom stations. An electric clock turns the intercom—as well as household appliances—on and off at preselected times. Provision is also made for phonograph attachment. This system may be used for programming and intercom simultaneously. An outdoor remote permits conversations with callers while the door is closed. Retail price will be approximately \$135, which includes master, three interior and one exterior remote stations, plus all necessary wire, boxes, and brackets. Additional remotes are available at \$13. Progress Manufacturing Co., Inc., Philadelphia 34, Pa.



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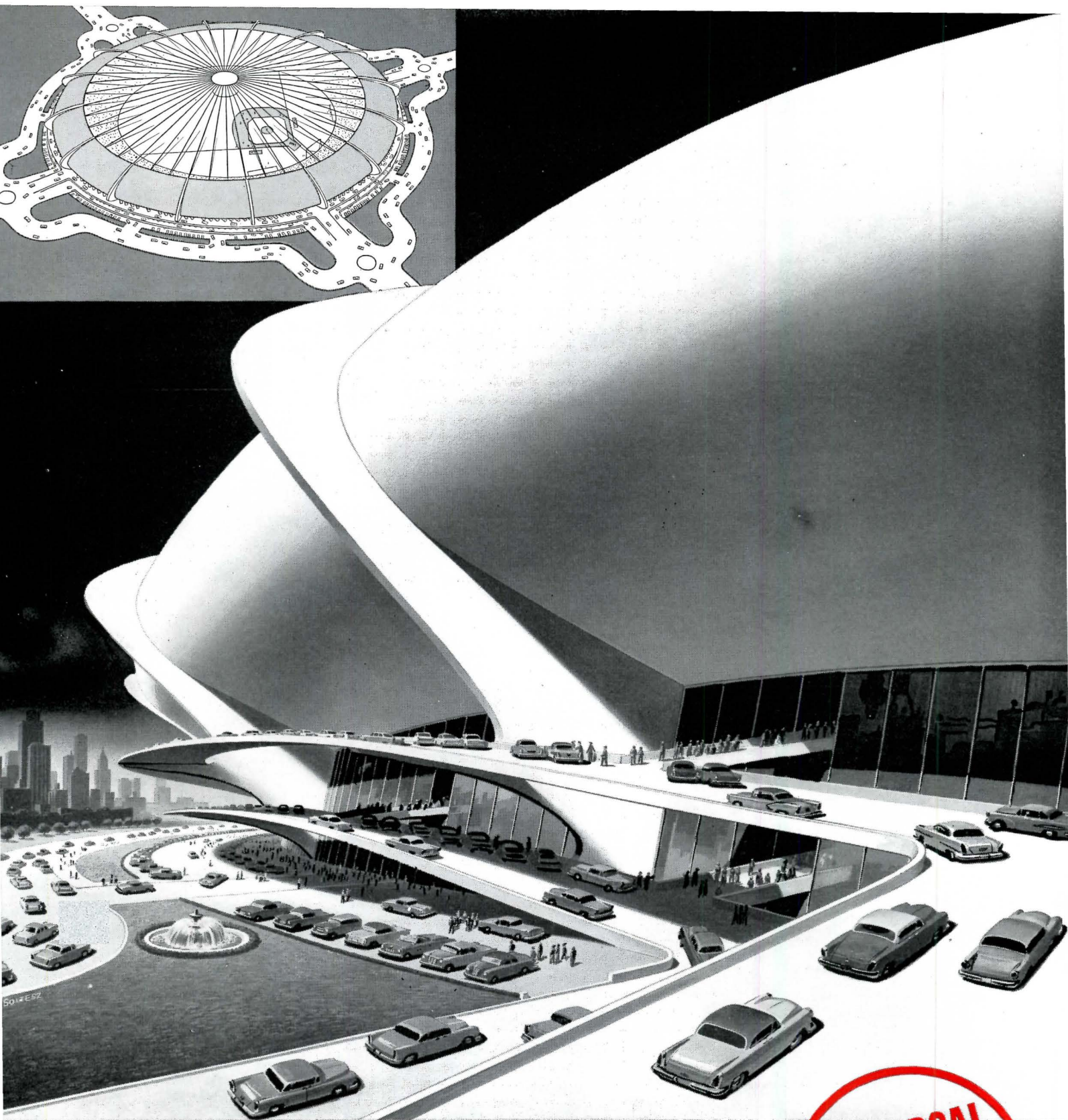


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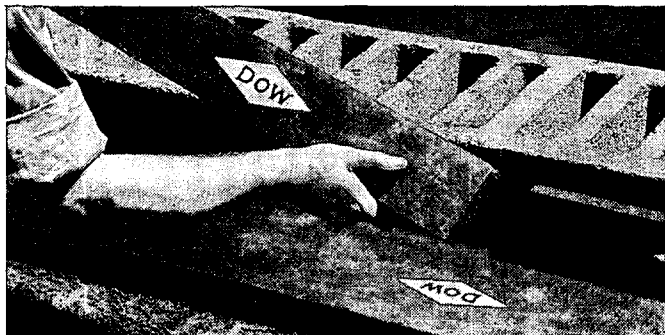
■ One of a series of advertisements being presented in national magazines by Universal Atlas — to promote interest in architectural contributions for a greater America through the medium of concrete.



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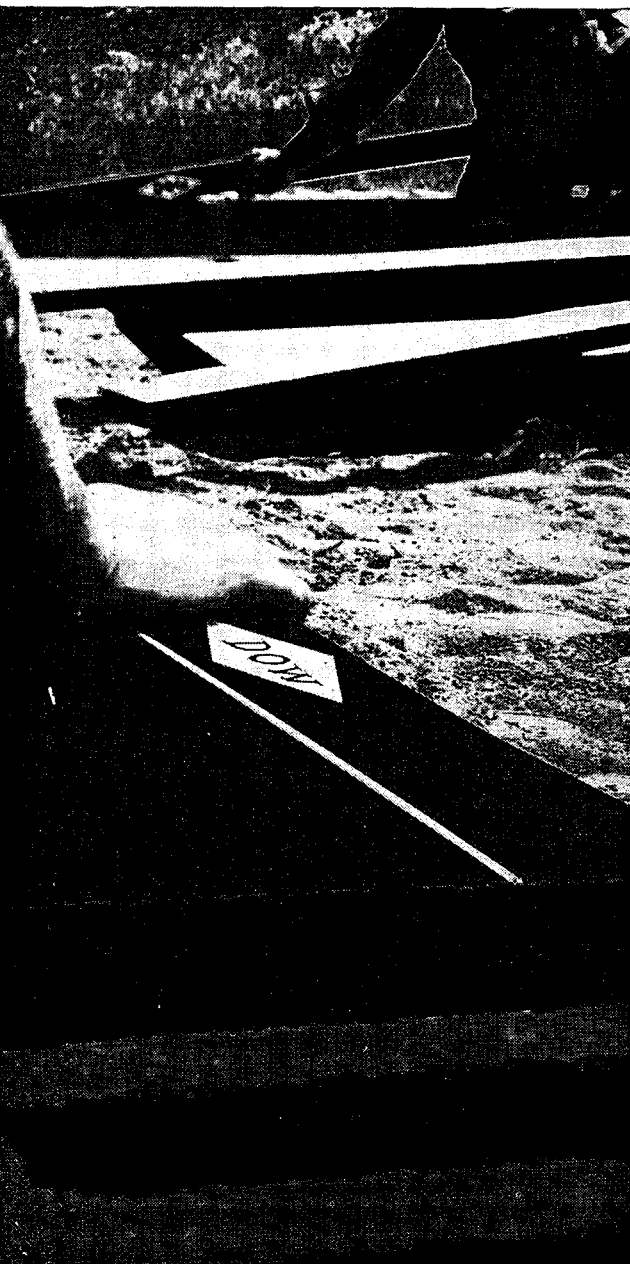
A snap to use! Only Scorbord offers this exclusive "snap-off" feature: No saws, knives or other cutting tools are needed. Simply snap to required width.

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There's a brand spanking new member in the Dow family of plastic foam insulations. Its name is Scorboard* and it offers all the advantages of the very best insulations on the market—plus some exclusive features of its own!

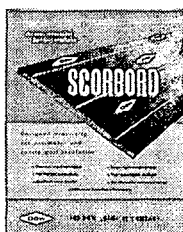
SCORBORD is designed to speed construction and cut labor costs. Big 2-foot x 8-foot boards make the work go faster—and they're light weight, easy to handle. Clearly marked pre-scorings at strategically located intervals make it possible to snap off a piece to almost any desired width. This exclusive feature reduces sawing and cutting to a bare minimum. Saves time and effort in any installation. And Scorboard is approved by the F.H.A. for perimeter insulation.

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Architects and Builders—For more information about Scorboard or for copies of this informative descriptive booklet, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. PL1928F.

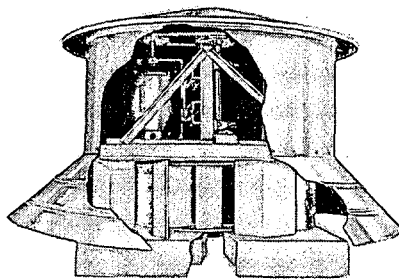
YOU CAN DEPEND ON



(Continued from page 185)

air and temperature control

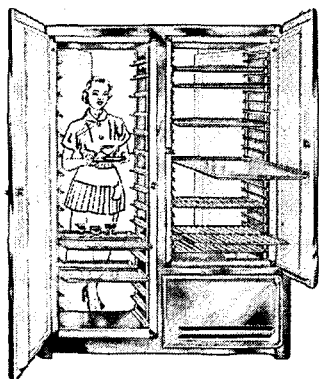
Gyra-Flo Power Roof Exhauster: new unit (right) controls air flow through exhauster, reducing noise factor. Wheel of belt-driven unit is backward curve type—gives steep pressure curves, nonoverloading power. Stainless-steel blades are statically, dynamically balanced to give operation from 830 to 29,750 CFM. Motor is at top of unit; framework, aluminum or other specified type, is welded and reinforced. Easy maintenance is feature of two or



three ft unit. Adaptable to schools, theaters, hospitals, institutions, etc. Chicago Blower Corp., 9863 Pacific Ave., Franklin Park, Ill.

Capitolaire VRS Fan-Coil Unit: designed for individual room temperature control, unit is flush with wall, with outlet connections concealed. Units can be tied into water heating equipment, or can be integral units of new hydronic heating, air-conditioning systems. Heavy mounting reduces noise; aluminum fins on copper tubes give large surface area for quick heating, cooling. Rheostat control simplifies control for special conditions. Water is supplied through piping system from central boiler, chiller. National-U. S. Radiator Corp., P. O. Box 1047, Johnstown, Pa.

BUILT TO LAST A LIFETIME! P-H Quality Refrigerators and Freezers



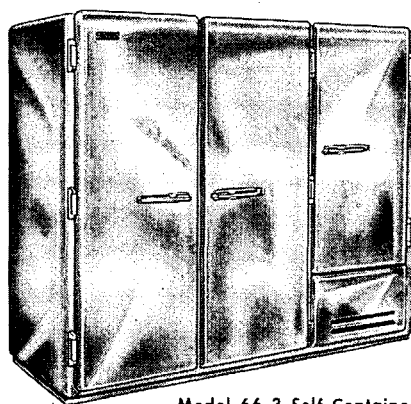
Model 40-4 Pass-Thru Self-Contained

A feature by feature comparison will prove to food consultants, architects and food management that Puffer-Hubbard Refrigerators and Freezers are superior in many ways. Their lifetime construction, modern streamlined appearance and many convenience features make them the ideal refrigerators for schools, restaurants, food stores, bakeries and institutions. It will pay you well to investigate P-H Refrigerators before you specify.

Genuine Porcelain or Stainless Steel Finish

ONLY P-H GIVES YOU ALL THESE FEATURES

- Exclusive "Grad-U-Matic" and Dual Fan Mullion Coil cooling systems assure positive cooling top and bottom.
- Choice of various combinations of Porcelain, Stainless Steel and Aluminum finishes — exteriors also available in colors.
- Heavy Electric-Welded Steel Frame Construction.
- 3½" to 4" Vapor-proofed Fiberglass Insulation.
- All Mullions Protected From Sweating.
- Heavy Duty Condensing Units pull-out for cleaning — all units tested 15 to 24 hours with operation chart.
- Optional Vap-O-Matic Drain requires no plumbing hook-up.
- Interchangeable Interior accessories include adjustable Shelves, Salad Tray Racks or Bun Pan Slides.
- Complete Sales and Field Service in every state.



Model 66-3 Self-Contained
UL Approved

Also AVAILABLE—A complete line of Reach-In, Pass Thru and Salad Refrigerators . . . Upright Storage Freezers . . . Baker's Freezers and Dough Retarders . . . Two-Temperature Refrigerators . . . 22 to 96 Cu. Ft. Capacities . . . Dry Beverage Coolers . . . and Walk-In Coolers and Freezers.

Write For Literature Or See Our File In Sweet's Catalog



PUFFER-HUBBARD REFRIGERATOR CO.
GRAND HAVEN, MICHIGAN

EXPORT OFFICE — PUFFER-HUBBARD INTERNATIONAL
440 Lafayette St., New York City — Cable "MANREFSUP"

construction

Panelseal: new permanent sealant for curtain-wall panels is cold-flow, single-component bonding agent—nonvolatile, vinyl-plastic material. Can be easily injected into seams, retains elasticity, need not be coated, not affected by outside conditions. Material can be used on most porous and nonporous surfaces. Available in standard gray, or other colors if specified. Panelseal, The Bettinger Corp., Waltham, Mass.

WoodX: wood particle flooring resembles polished cork, has excellent wearability. Expansion is minimal. Random graining provides slip-proof surface with some acoustical properties. Installation is same as for any other hardwood floor. Hard finish is noted feature. Material may be compressed in various densities for different installations. L. D. Reeder Co., Dept. P, 2900 Rowena Ave., Los Angeles 39, Calif.

X-Cell-All Surface Preparer: liquid "sandpaper" prepares painted or varnished surfaces for refinishing. Clear liquid is put on surface with cloth, reduces gloss of floor or wall. Also gives "tack" to aid new finish to bond to surface. Preparer removes wax, grease, polish; new finish—enamel, paint, varnish—will not creep or run. National Chemical & Mfg. Co., 3617 S. May St., Chicago 9, Ill.

InterAct: recently developed joining material for uniting similar and dissimilar nonferrous metals. Chemical joining of copper and aluminum, other metals, possible through ion exchange. Join becomes stronger, resistant to corrosion; retains electrical, physical, chemical properties of original metals. Material is a reaction eutectic. Available in three forms: coils, powder, granular substance—each slightly different in make up for different applications. Application process varies as to types of elements joined. Intertectics, Inc., Northfield & Forbes Rds., Bedford, Ohio.

Staylite Chalkboard: glass fiber, reinforced-polyester plastic chalkboards are reputed not to crack, shatter, peel. Lightweight gives easy installation; maintenance is minimum. Weight 8-oz psf; panel sizes: 4' x 8'. Colors available are light green,

(Continued on page 194)

HANLEY

DURAMIC GLAZED STRUCTURAL FACING TILE

Color plus something extra. Hanley tile comes in a wide range of beautiful colors . . . colors that complete any architectural concept and provide lasting beauty. This beauty is just one reason for Hanley tile's popularity with architects, builders and owners. You get beauty plus a product that is the result of years of experience in the structural clay products field, scientific quality control, and the most modern manufacturing facilities in the industry. It is your guarantee of lasting beauty and satisfaction.



Literature describing Hanley glazed brick and tile is filed in Sweet's Catalog Services. For copies, contact your nearest Hanley Sales Office or Distributor.

distribution in all principal cities



HANLEY COMPANY

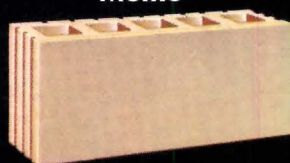
Administrative Office: One Gateway Center, Pittsburgh 22, Pa.

Home Office: 28 Kennedy Street, Bradford, Pa.

District Sales Offices: **New York** • 101 Park Avenue
Detroit • 14976 Schaefer Highway
Buffalo • 625 Delaware Avenue
Pittsburgh • 647 Washington Road, Mt. Lebanon



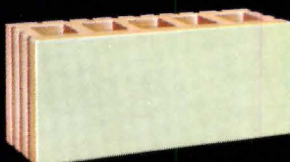
**No. 745 Cream Buff
Mottle**



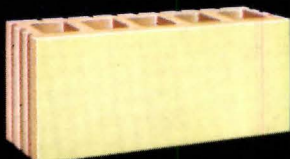
No. 758 Tan



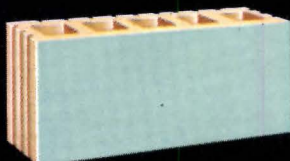
No. 780 Brown



No. 719 Light Green



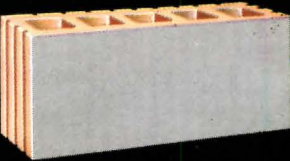
No. 757 Yellow



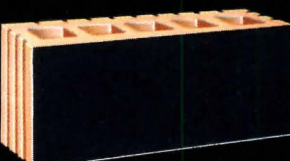
No. 731 Light Blue



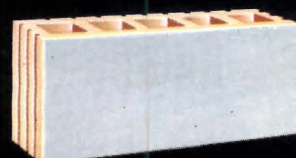
**No. 725 Pearl White,
Medium Speck**



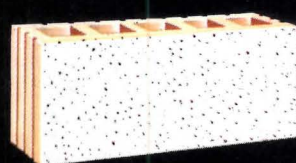
No. 501 Pearl Grey



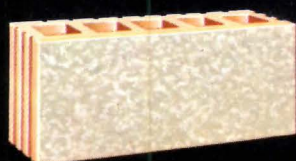
No. 701 Black Gloss



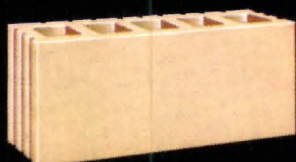
No. 775 Light Grey



No. 712 Spice



No. 772 Grey Mottle



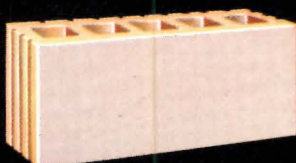
**No. 711 Clear Glaze,
Cream**



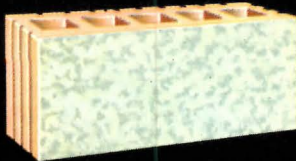
No. 708 Dark Green



No. 764 Ivory



No. 714 Peach Coral



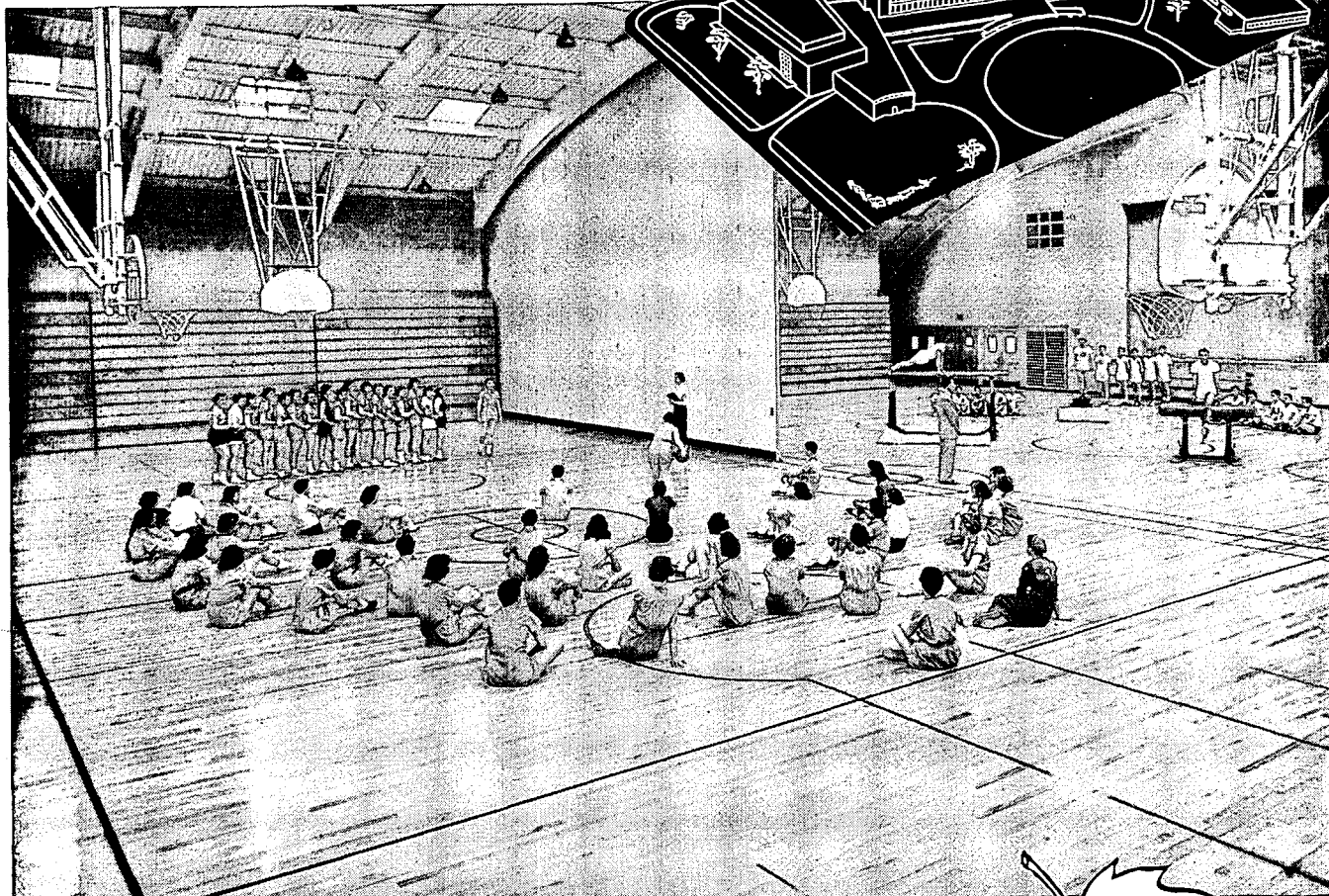
No. 749 Green Mottle



**No. 763 Cream
Speckle**

justly, the pride of six communities!

New Senior High School of the Chambersburg Joint School Authority, Chambersburg, Pa., serving six school districts. Architects: Lawrie and Green, Harrisburg, Pa.



One of many splendid features—this ideal multi-purpose gymnasium, end-result of the meeting-of-minds of 36 forward-looking school directors.

Floored, for a long future, with **NORTHERN HARD MAPLE**

The endurance, resilience and brightness that have made Northern Hard Maple flooring virtually the universal choice for gymnasium and multi-purpose rooms, make it ideal for other hard-usage school areas. It fights abrasion and impact, doesn't splinter. Cleaning and maintenance are easy. Refinishing, when finally needed, is simple (there's always a "new floor" underneath). Specify Northern Hard Maple with the confidence it has earned. It is available in regular strip or in block and pattern designs, in standard, warranted MFMA grades, offering almost endless variety. The MFMA mill-mark is your warranty of strict grading, genuineness of species and precision manufacture.



SEE SWEET'S

—Arch. 13J-Ma, for full technical data.

WRITE

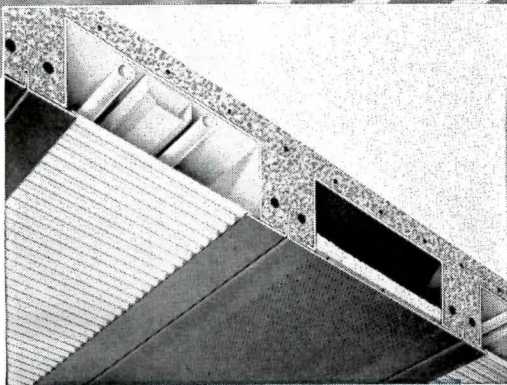
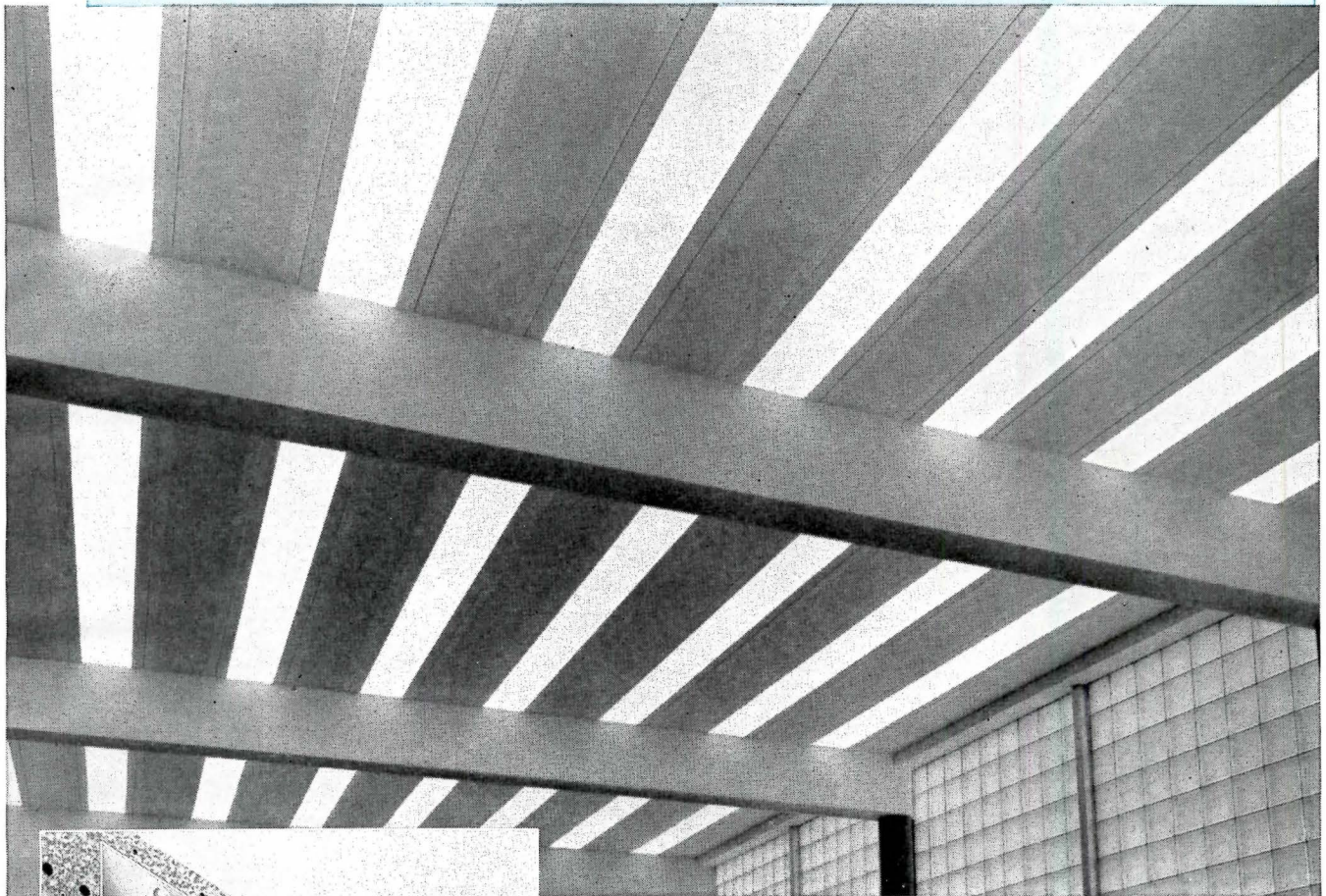
—for 1958 official MFMA listing of approved floor finishing products.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

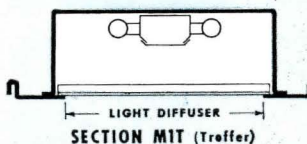
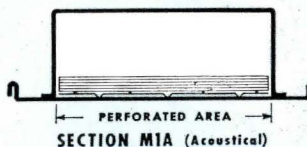
SUITE 583 PURE OIL BUILDING, 35 EAST WACKER DRIVE

CHICAGO 1, ILLINOIS

ACOUSTICAL and TROFFER FORMS



MAHON
ACOUSTICAL and TROFFER FORMS



... for Acoustical Ceilings with Recessed Lighting!

Mahon Acoustical and Troffer Forms provide an effective acoustical ceiling with recessed lighting as well as serving as the permanent forms for concrete joist and slab construction of floors and roofs. These are long span units which are integrated with and remain as a part of the conventional concrete structural system. Only a minimum of temporary shoring is required at mid-span during pouring and curing of concrete. This is permanent, fireproof construction which has a broad application in modern buildings . . . it is used extensively for auditoriums, school classrooms, and in other rooms where an acoustical ceiling with recessed lighting is desirable. Mahon Troffer Sections can also be used with either of the two Mahon M-Deck Sections to provide a combined roof and acoustical ceiling with recessed lighting. In this arrangement the long span M-Deck Sections serve as the structural members, the finished ceiling material and the acoustical treatment—all in one light weight, quickly erected unit. Purlins are eliminated . . . M-Deck Sections span from wall to wall or from truss to truss. See Sweet's 1958 Files for complete information including Noise Reduction Coefficients and Section Properties, or write for Catalogue AT-58.

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Acoustical and Troffer Ceiling Forms; Steel Roof Deck and Long Span Acoustical M-Decks; Electrified M-Floors; Insulated Metal Curtain Walls; Underwriters' Rated Fire Walls; Rolling Steel Doors, Grilles and Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters.

Above is the Ceiling of the Auditorium in the Eugenia Mettetal School, Detroit, Michigan. It is one of 50 rooms with Mahon Acoustical-Troffer Ceilings. Shreve, Walker & Associates, Inc. Architects. Alfred A. Smith, Inc., Gen. Contractors.

MAHON

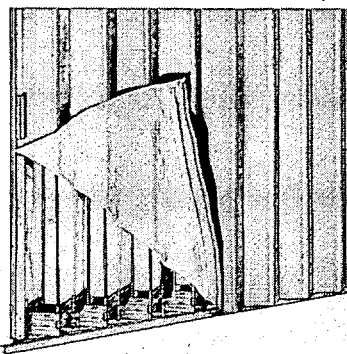
p/a products

(Continued from page 190)

gray, white, dark green. Adaptable for schools, institutions. Stahl Industries, 130 Linden Ave., Youngstown, Ohio.

doors and windows

Multi-X Foldoor: X-type hinge construction gives rigidity necessary for large folding doors while retaining wide-profile—in fabric-covered Foldoor line. Hinge also allows simple installation for exposed or



recessed tracks. Photo (above) shows hinge action. Holcomb & Hoke Mfg. Co., Inc., 1545 Van Buren St., Indianapolis 7, Ind.

electrical equipment, lighting

LBQ Louver Fin: new low-brightness-quality fin has parabolic cross-section of extruded aluminum. Contour reflects light onto work surface—reduces glare, brightness. Rigidity of fin is stressed. Fin is easily cleaned—fits Alzak troffer series. Curtis Lighting, Inc., 6135 W. 6th St., Chicago 38, Ill.

Musi-Talk System: music and voice intercommunication system for residential installation allows simultaneous operation of radio and intercom network. Six-tube printed circuit AM radio is incorporated—volume controls for each part of system are separate. Five remote stations in addition to master control. Packaged in two kits for builder convenience. Fanon Electric Co., Inc., 98 Berriman St., Brooklyn 8, N. Y.

sanitation, plumbing, water supply

Rapidayton 2-Wire Dolphin Submersible Pump: developed for suburban, farm installation, pump can be used for either shallow- or deep-well applications. Can be used for depths up to 360'; models from ¼ to one hp. Pump is frost-free, does not need priming. Dielectric fluid-filled motor is hermetically sealed. No control box necessary; pump operates completely submerged. Stainless-steel stage cases, nylon impellers used in construction reduce abrasion. The Tait Mfg. Co., 500 Webster St., Dayton 1, Ohio.



THE CEILING: FORESTONE

LaTorre Restaurant
San Francisco, California
General Contractors:
Reliable Alterations
Acoustical Contractor:
Cramer Acoustics

Economical Forestone is available through the following
Simpson Certified Acoustical Contractors:

- | | |
|---|--|
| <p>ALABAMA
Badham Insulation Co., Inc., Birmingham
Shook and Fletcher Insulation Company, Birmingham
Stokes Incorporated, Mobile</p> <p>ARIZONA
Fiberglas Engineering & Supply, Phoenix
Hall Insulation & Tile Co., Tucson</p> <p>ARKANSAS
Buck Hendershott Company, Little Rock</p> <p>CALIFORNIA
Coast Insulating Products, Los Angeles
Cramer Acoustics, Fresno and San Francisco
John K. Haas Company, San Diego
H. W. Rivett Company, Sacramento</p> <p>COLORADO
Construction Specialties Company, Denver</p> <p>CONNECTICUT
Wilson Construction Company, Hartford</p> <p>FLORIDA
Anning-Johnson Company, Miami
Anning-Johnson Company, Tampa
Center Brothers, Inc., Jacksonville</p> <p>GEORGIA
Anning-Johnson Company, Atlanta
Center Brothers, Inc., Savannah</p> <p>IDAHO
Fiberglas Engineering & Supply, Boise
Idaho Acoustical & Building Specialties Co., Boise</p> <p>ILLINOIS
General Acoustics Company, Chicago
George S. Grimmer & Co., Champaign, Decatur and Springfield</p> <p>INDIANA
The Baldus Company, Fort Wayne
E. F. Marburger & Son, Inc., Indianapolis</p> <p>IOWA
Lamoreaux and Assoc., Inc., Marshalltown</p> <p>KANSAS
Ecoff & Co., Wichita</p> <p>KENTUCKY
Atlas Plaster & Supply Company, Louisville</p> <p>LOUISIANA
King & Co., Inc., New Orleans</p> <p>MARYLAND
Lloyd E. Mitchell, Inc., Baltimore</p> <p>MASSACHUSETTS
Acoustical Contractors, Inc., Brighton</p> <p>MICHIGAN
Detroit Acoustical Contracting Co., Detroit
Grand Rapids Acoustical Co., Grand Rapids and Lansing</p> <p>MINNESOTA
Dale Acoustics, Inc., Minneapolis</p> <p>MISSISSIPPI
Stokes Incorporated, Greenwood
Stokes Incorporated, Jackson</p> <p>MISSOURI
Hamilton Company, Inc., St. Louis
B. J. Lutz, Inc., Kansas City
Midwest Services, Inc., Joplin</p> <p>NEBRASKA
Kelley Asbestos Products Co., Omaha</p> <p>NEW JERSEY
Connor & Company, Inc., Kenilworth
Kane Acoustical Company, Inc., Fairview</p> <p>NEW MEXICO
Fiberglas Engineering & Supply, Albuquerque</p> | <p>NEW YORK
Buffalo Acoustical Corporation, Buffalo
The Cronin Acoustical Co., Stoney Point
Davis Acoustical Corp., Albany
Davis-Fetch Acoustical Corporation, Syracuse
Davis-Fetch & Company, Inc., Buffalo and Jamestown
Robert J. Harder, Inc., Lynbrook, L. I.
James A. Phillips, Inc., New York
Rochester Davis-Fetch Corp., Ithaca and Rochester</p> <p>NORTH CAROLINA
The Bonitz Insulation Co., Greensboro, Goldsboro and Asheville
Bost Building Equipment Co., Charlotte</p> <p>OHIO
Acoustical Contracting & Supply Corp., Cleveland and Youngstown
Cincinnati Floor Company, Cincinnati
Riethmiller Acoustic Company, Columbus</p> <p>OKLAHOMA
Denman Floors Company, Oklahoma City
Harold C. Parker & Company, Oklahoma City
Midwest Marble & Tile Company, Tulsa</p> <p>OREGON
Commercial Tile Company, Eugene
R. L. Elfstrom Company, Salem
Johnson Acoustical & Supply Co., Portland</p> <p>PENNSYLVANIA
Acousti-craft, Inc., Philadelphia
Standard Floor Company, Pittsburgh</p> <p>SOUTH CAROLINA
Bonitz Insulation Co., Columbia</p> <p>TENNESSEE
Alexander Marble & Tile Company, Memphis
Anning-Johnson Company, Knoxville</p> <p>TEXAS
Blue Diamond Company, Dallas
Builders Service Company, Fort Worth
Collins Roofing & Sheet Metal Company, Odessa
General Supply Company, Inc., Houston and San Antonio
Houser Resilient Floors Co., El Paso
Raymond Rambo Materials Co., Corpus Christi</p> <p>UTAH
Utah Pioneer Corporation, Salt Lake City</p> <p>VIRGINIA
Anning-Johnson Company, Alexandria
Manson-Smith Company, Inc., Norfolk and Richmond</p> <p>WASHINGTON
Elliott Bay Lumber Company, Seattle
Fiberglas Engineering & Supply, Spokane</p> <p>WEST VIRGINIA
Asbestos & Insulating Co., Charleston</p> <p>WISCONSIN
Building Service, Inc., Appleton and Milwaukee</p> <p>WYOMING
Construction Specialties Company, Casper</p> <p>CANADA
F. Drexel Company Limited, Edmonton, Alberta, Vancouver, B. C., Victoria, B. C. and Calgary, Alberta
Hancock Lumber Ltd., Edmonton, Alberta</p> <p>HAWAII
Hawaii Builders Supply Company, Limited, Honolulu</p> |
|---|--|

The Contractors above also install these other Simpson acoustical materials: Hollokore-drilled Perforated Tile—standard and scatter drilled, Acoustical Roof Slab, Fissured Mineral Tile, Metal Acoustical Units, Perforated Hardboard, Perforated Cement Asbestos Board. AC-78



SIMPSON LOGGING COMPANY

1010 WHITE BUILDING, SEATTLE, WASHINGTON
General Offices in Shelton, Washington

THE CEILING: FORESTONE



John La Torre, owner, and Martin van London, chef, of La Torre's well known San Francisco restaurant, receive continuous praise from guests who have enjoyed the food, the wine and the quiet and elegant atmosphere.

Attractive, Economical Sound-Conditioning — A Most Important Part of Good Building Design

Simpson Forestone is the world's first fissured woodfiber acoustical tile. Its random textured surface adds beauty and warmth to the design of any building and the decor of any room. Its sound absorption efficiency is comparable to that of standard perforated woodfiber acoustical tile. *And Forestone costs no more than the popular thicknesses of perforated woodfiber tile.*

Forestone is available in 12" x 12" and 24" x 24" tiles, installed by nailing, cementing or hanging in mechanical suspension systems; in 12" x 23 $\frac{3}{4}$ " tiles for exposed Z and T suspension systems; in 12" x 24" flange-jointed tile for

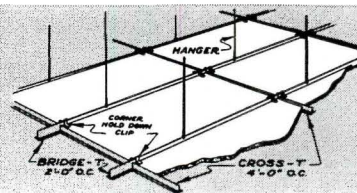
easy nailing or stapling; and as 24" x 24" and 24" x 48" ceiling board to fit exposed grid suspension systems. The La Torre Restaurant installation (shown above) is Forestone Ceiling Board.

Consider Forestone when you are planning or designing your next job. It quiets rooms—beautifully and economically! You can get full information about Forestone from your nearest Simpson Certified Acoustical Contractor (see list on opposite page).



FISSURED WOODFIBER ACOUSTICAL TILE

FORESTONE CEILING BOARD INSTALLATION



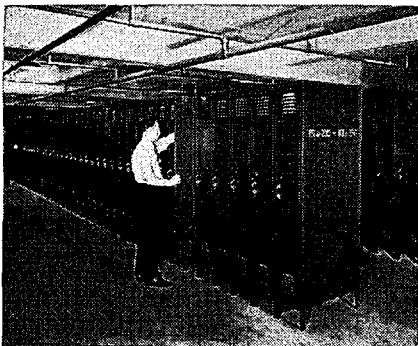
Forestone® Ceiling Board is made to fit exposed grid suspension systems, which are composed of lightweight inverted T-sections into which the board is laid. The grid is usually suspended directly without the necessity for 1 $\frac{1}{2}$ " channels. The individual boards may be removed for easy access to ventilating and utility lines above the suspended ceiling.

*Reg. U.S. Pat. Off.—U.S. Pat. No. 2,791,289

Now...TRUSCON



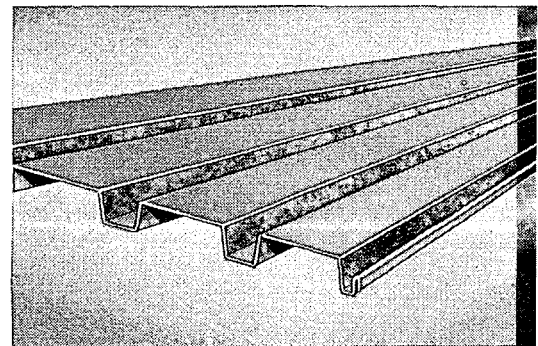
Other Republic Steel Products for Safe, Dependable Construction



REPUBLIC STEEL LOCKERS are safe, pilfer-proof, tamper-proof. Wide choice of styles and locking mechanisms. Bonderized for lasting paint adherence and resistance to damage—practically maintenance-free. Send coupon today.



TRUSCON Series 57 METAL DOORS are designed to withstand the high frequency usage of commercial and public buildings. Available in a wide selection of types, designs, and finishes in both single-swing and double-swing units.



NEW! 24-INCH-WIDE TRUSCON FERROBORD® is now available in new design and in lengths up to 32' 6". It roofs large areas quickly. Straight lay means several crews can roof without delay. Strong, light, fire-resistant. Mail coupon.

Certifies Every "O-T" Steel Joist

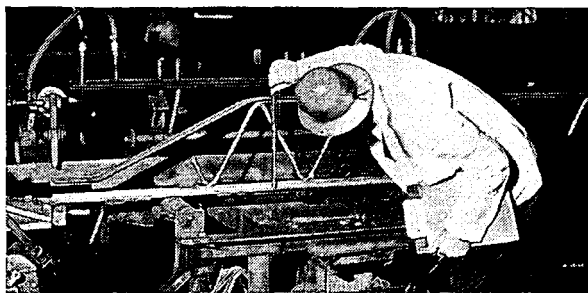
For your protection, Republic's Truscon Steel Division now offers you, upon request, written certification that the Truscon "O-T"® Steel Joists you specify are manufactured in accordance with the standards of the Steel Joist Institute and are fully qualified to bear the SJI Seal of Approval.

This certification is issued by authority of the Steel Joist Institute to cover "O-T" Open Truss Steel Joists for each individual building for which they are engineered. Written certification will also be provided the owner at your request.

This is further assurance of predictable, dependable load bearing. Don't take chances on just any joist. Specify Truscon "O-T" Shortspan Steel Joists . . . manufactured according to the rigid standards of the Steel Joist Institute and fully qualified to bear the SJI Seal of Approval—and now certified in writing.

For additional information, see or call your Truscon representative . . . or send coupon today!

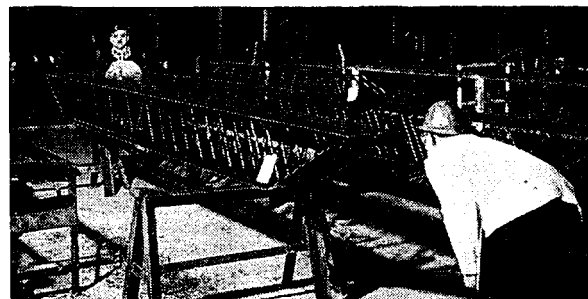
THIS IS WHY TRUSCON CAN CERTIFY



The Quality Verification Program conducted by "this man in the white coat" is a continuing program of checking and inspecting of member company joist manufacturing processes and materials.



This thorough inspection on an unscheduled basis protects the integrity of the Steel Joist Institute Seal of Approval. This voluntary program gives the Seal of Approval real meaning.



The Quality Verification Program is administered for the institute by a nationally known testing laboratory. Every fabricating step is checked for adherence to standards. And, Truscon certifies it!

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*World's Widest Range
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Steel Products*

REPUBLIC STEEL CORPORATION

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- ☐ Truscon "O-T" Steel Joists ☐ Republic Lockers
☐ Truscon Series 57 Doors
☐ Truscon 24-Inch Ferrobord

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Address _____

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books received

How to Find Your Own Style in Painting. Ray Bethers. Hastings House, Publishers, 41 E. 50 St., New York, N. Y., 1957. 96 pp., illus. \$3.50

New Houses for Moderate Means. H. Dalton Clifford. Transatlantic Arts, Inc., Hollywood-by-the-Sea, Fla., 1957. 128 pp., illus.

Oil and Tempera Painting: 500 Questions and Answers. F. Taubes. Watson-Guption Publications, Inc., 24 W. 40 St., New York, N. Y., 1957. 144 pp., illus. \$3.75

Japanese Gardens. Jiro Harada. Charles T. Branford Co., 551 Boylston St., Boston, Mass., 1956. 160 pp., illus. \$8.50

the persistent esthetic battle

The Tastemakers. Russell Lynes. Harper & Brothers, 49 E. 33 St., New York, N. Y., 1954. 362 pp., illus. \$5

Like the weather, taste is always a timely topic. With typical American efficiency, we do what we can about both. For the first, we provide air conditioning; for the second, we have created a well regulated climate of equally stunning artificiality. However, in spite of our current preoccupation with scientific standards and controls, and our growing conviction that there is nothing that cannot be pinned to a point on a graph or given a mathematically graded rating from A to Z, taste remains an ephemeral thing. It refuses to be defined, and its only consistency is the reliable way in which it flouts its own rules. For anyone interested in the history of this elusive and provocative topic, Russell Lynes' classic study of the cultural crusade in America has already proved itself a superior guide. It has a particularly poignant kind of fascination today, when skilful manipulation of the mass mind for commercial purposes is exploring and exploiting the subject of taste as never before, and the basic American concept of beauty-for-everyone seems doomed to disappear with the Indian and the nickel cigar. Lynes' entertaining account of the dedicated men and women who have been directors of this odd and persistent esthetic battle leaves us a bit sadder, a little more skeptical, and infinitely less optimistic about the future of the great American dream.

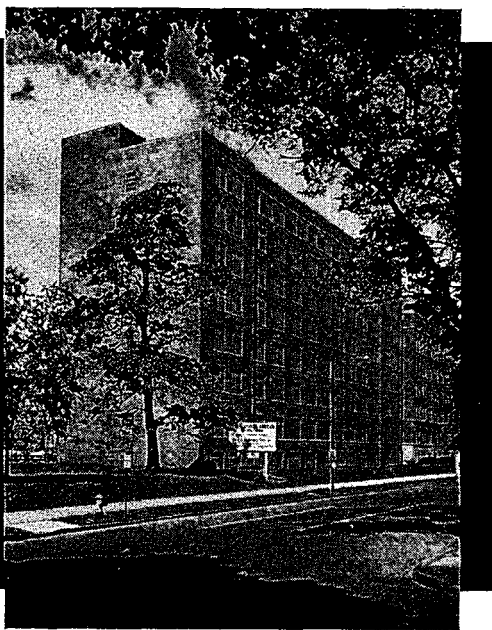
In the sense that the battle is concerned with the elevation of standards of our physical environment, the story is largely architectural. The American landscape is the best documentation of American taste. The buildings that crowd it, in a bewildering succession of styles, are the most tangible record of our inconsistencies; their decorative and utilitarian furnishings, including art objects, tell the rest of the tale. The passing pretensions of architecture

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New Addition, Mercy Hospital, Toledo, Ohio
Architect: Robert J. Reiley

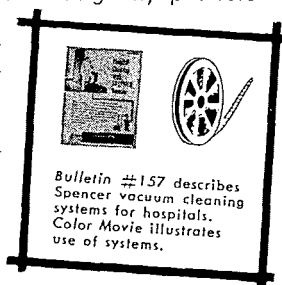
A Spencer system—consisting of vacuum producer and dirt separator located in the basement and piping to inlets throughout the building—permits fast, thorough cleaning.

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Positive, "closed system" vacuum cleaning action whisks away dust and dirt, leaves mops fresh and clean—while eliminating any possible spreading of dust or germs into the air.

The Spencer vacuum system has many other cost and labor saving uses, too, including boiler cleaning, water pick-up and conventional hose and tool vacuum cleaning.

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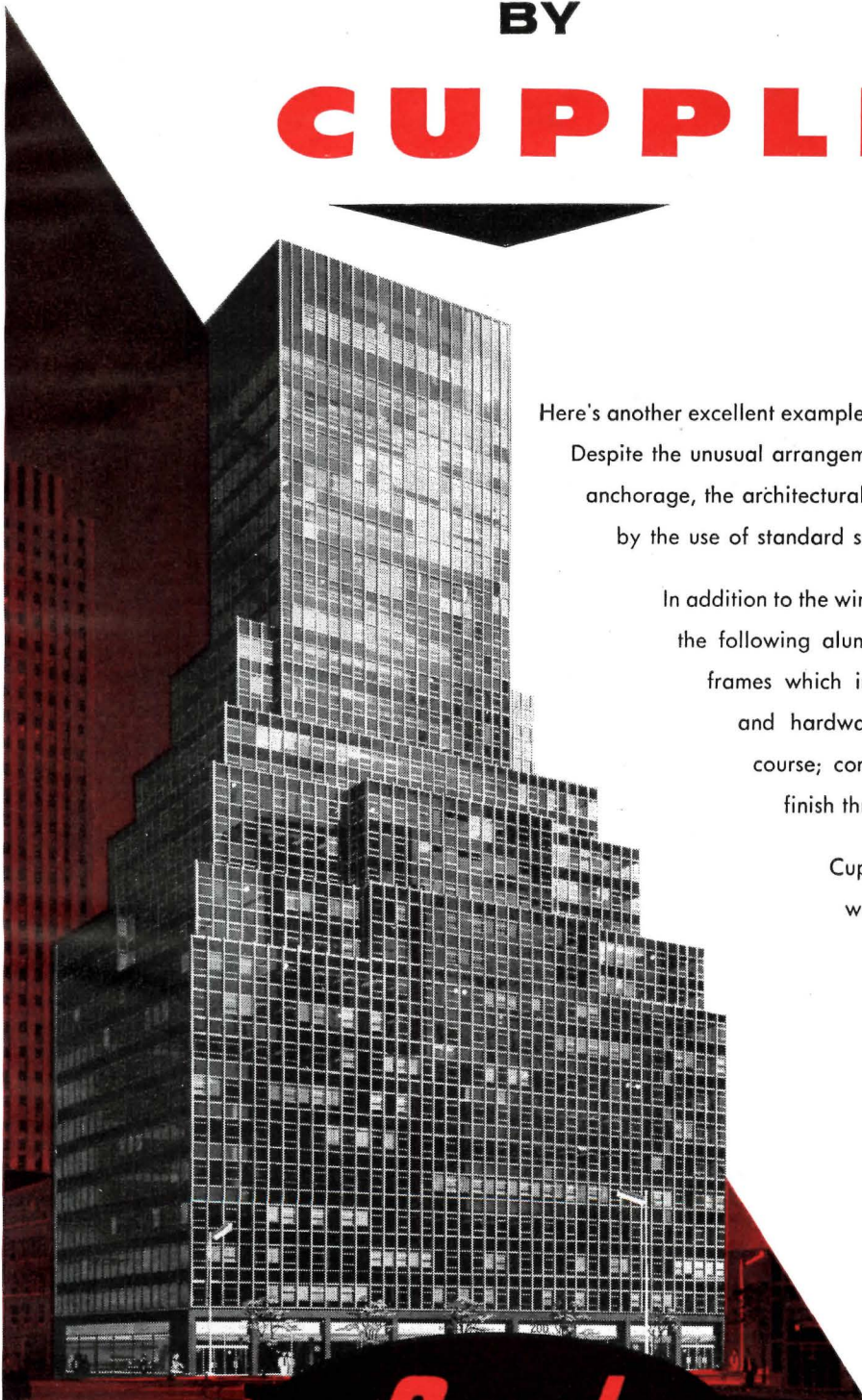
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(Continued on page 200)

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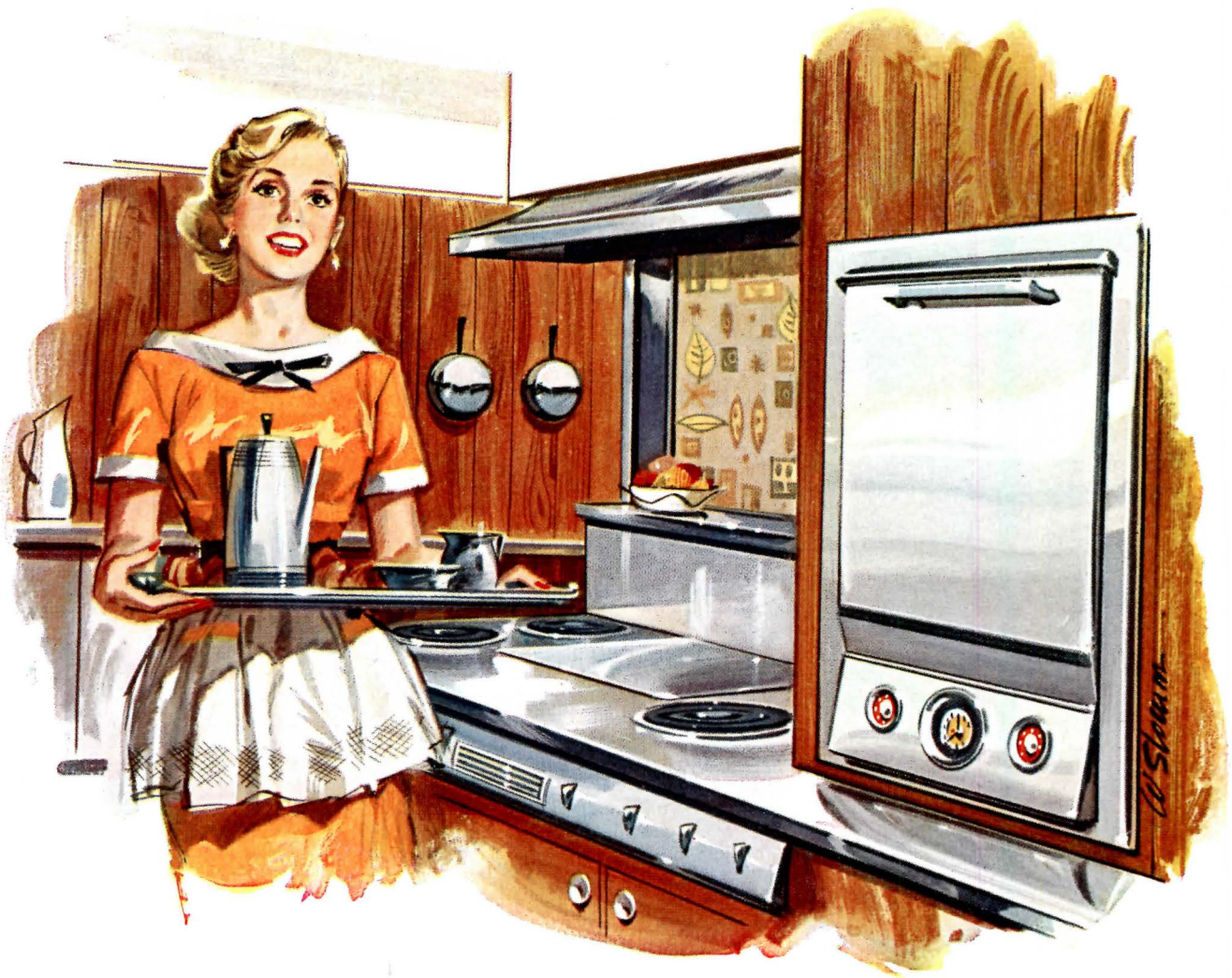
City _____ State _____

reviews

(Continued from page 198)

and their accompanying changes in decor seem to reflect all that is most foolish in human character in any given moment in time. Our faulty aspirations and overly flattering self-evaluations come through our domestic arts all too clearly: we imagine ourselves statesmen of democracy in the great Greek tradition and build temples to live in; we believe that we are sophisticated connoisseurs of world culture and dwell in clever cottages reminiscent of our travels—Swiss chalets and Oriental villas—filled with a smothering assortment of exotic bric-a-brac; we are princes of commerce, and commission palaces filled with the most ostentatious treasures; we discover the ultimate snobbery of understatement and demonstrate our new found refinement by substituting pewter for gold plate. The whole historical process is detailed chronologically, from the emergence of the Common Man and the age of public taste in the 1820's, through the growth of individual fortunes and private taste in the latter part of the century, to the corporate taste of today. Not too surprisingly, since Americans are a puritanical people who want their pleasures duty-coated, the justification of each succeeding style has always been argued by identical moral claims of the "honesty," "suitability," "inevitability," and "rightness" of the new ideas; and the movements have invariably collapsed with the deterioration of the style into a mockery of mannerisms and clichés. Whatever the fashion, whoever the leader, the change has inevitably been carried out in the name of rationality and reform. Andrew Jackson Downing called for the abolition of "poor and tasteless temples" and the substitution of "beautiful, durable, and convenient mansions," built in the Gothic manner. Charles Lock Eastlake preached the need for "simplicity" and "sincerity" as expressed in

(Continued on page 206)



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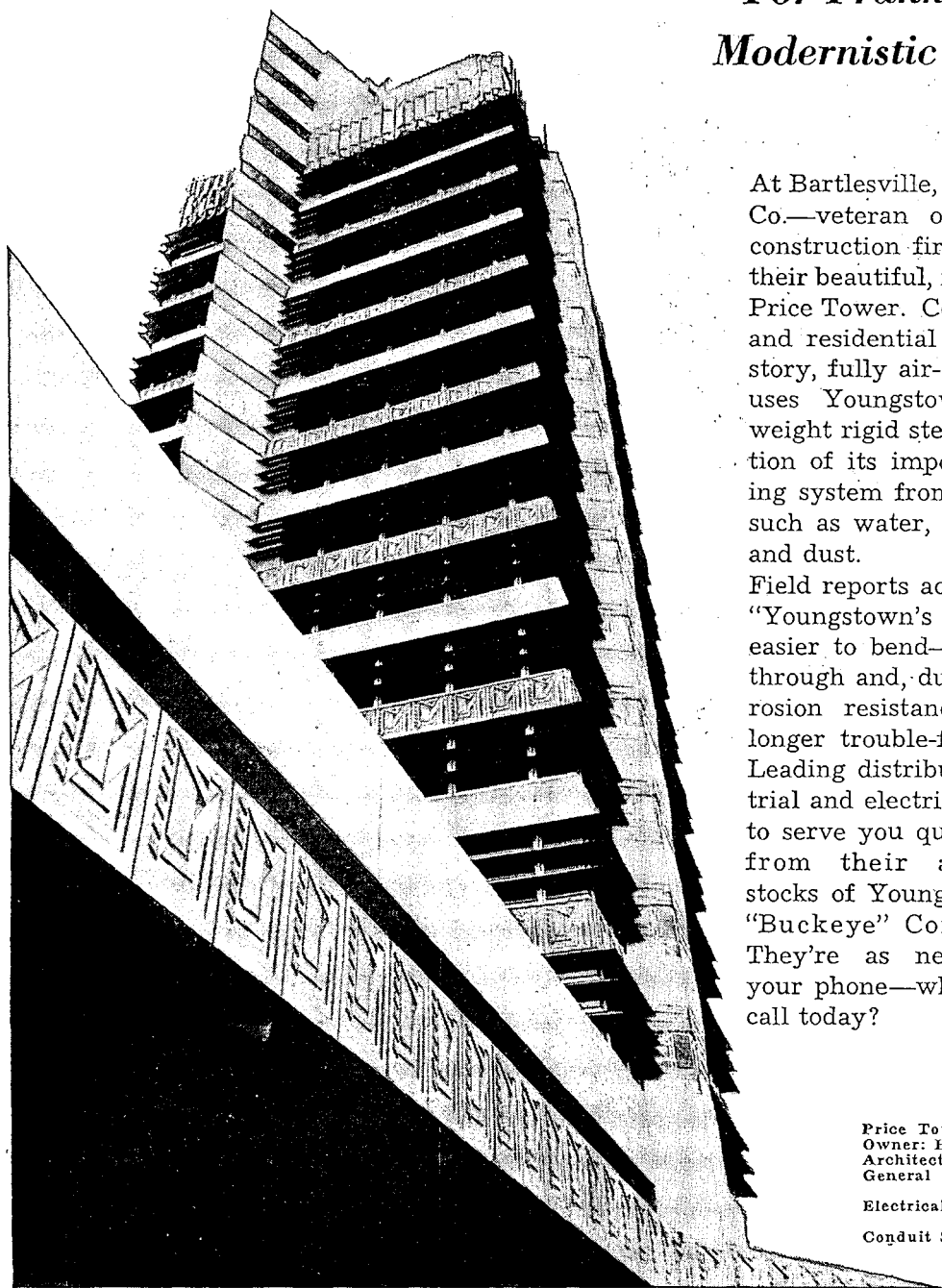


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*For Frank Lloyd Wright's
Modernistic Price Tower*



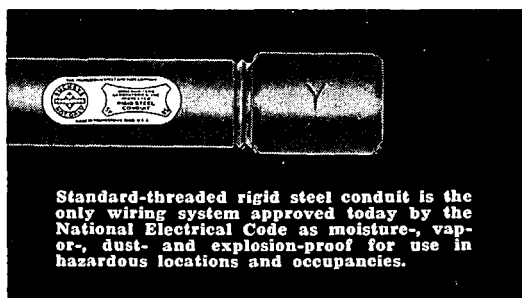
At Bartlesville, Okla., the H. C. Price Co.—veteran oil and gas pipeline construction firm—recently opened their beautiful, new cantilever-design Price Tower. Containing both offices and residential apartments, this 19-story, fully air-conditioned structure uses Youngstown "Buckeye" full-weight rigid steel conduit for protection of its important electrical wiring system from damaging elements such as water, moisture, vapor, dirt and dust.

Field reports across-the-nation state: "Youngstown's 'Buckeye' Conduit is easier to bend—easier to fish wires through and, due to its superior corrosion resistance, affords a much longer trouble-free service life."

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Owner: H. C. Price Co.
Architect: Frank Lloyd Wright
General Contractor: Culwell Construction Co.,
Oklahoma City, Okla.
Electrical Contractor: Industrial Electric Co.,
Oklahoma City, Okla.
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Sprightly chessmen march across a background of burnt orange, dappled with black and accented by gold, giving a distinctive character to the decor of the Mint Casino at Las Vegas. This carpet was developed by Holmes from an original sketch. Interior design and furnishings by Albert Parvin Company, Los Angeles.

Beautiful Holmes

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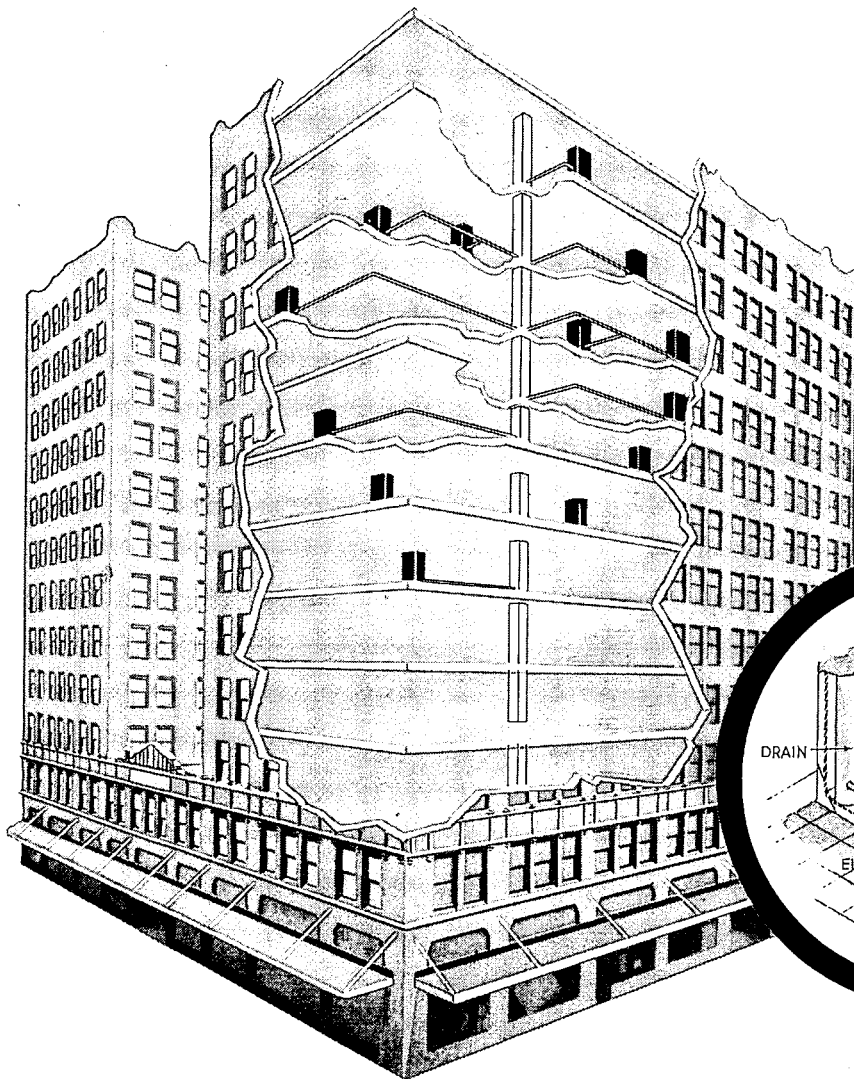
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The Carrier Multi-Weathermaker System...

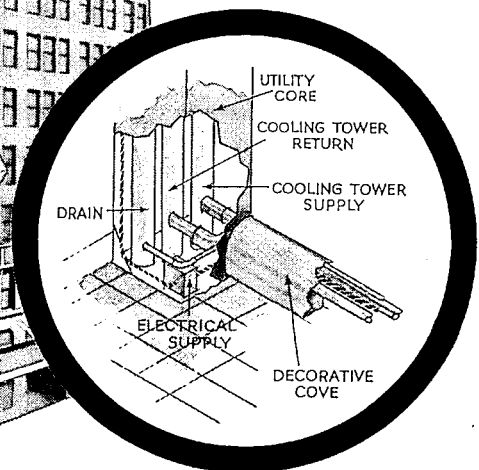
A NEW LOW-COST WAY TO

The Carrier Multi-Weathermaker* System is a unique, new concept of air conditioning so flexible it can be adapted to any commercial or industrial building. Three main factors contribute to its flexibility—a Master Plan, Utility Core and self-contained Weathermaker units. Where funds are limited, the System can be installed in critical areas first, then expanded to include

other areas later. Or the entire System can be installed at one time. Either way, there's no disruption of normal routine. The questions and answers here describe the System's advantages in some detail. For complete details, call your Carrier dealer, listed in the Classified Directory. Or write for the booklet, "Carrier Multi-Weathermaker System." Carrier Corporation, Syracuse, New York.



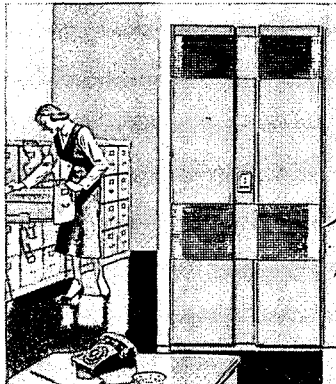
In a typical multi-story office building, the Utility Core of the System is installed vertically to provide service outlets to each floor. In a low, horizontal factory, the Core is suspended parallel to the floor to provide maximum flexibility. Units can be used many ways, four of which are shown on the right.



AIR CONDITION A BUILDING!

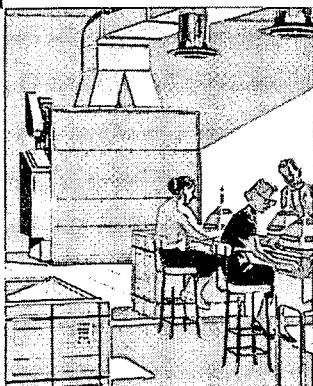


For individual offices, the Carrier Multi-Weathermaker System can economically air condition each office. Individual Weathermaker units, connected to inexpensive ducts, do the job. Units can be recessed in a wall or storage area.

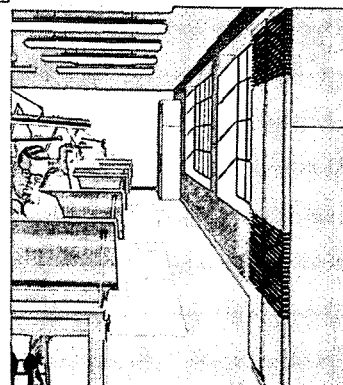


For a whole floor of a building, a Carrier Multi-Weathermaker System can air condition the entire space with a number of units. Each individual Weathermaker has all the components necessary to cool, dehumidify, filter and circulate the air.

For an open production area of a plant, a high-capacity Carrier Commercial Weathermaker using special ductwork can spot-cool an assembly line. In the System, you can air condition other plant areas with smaller air or water cooled Weathermakers.



For an engineering-drafting room, quiet Carrier Weathermakers can discharge draft-free air without any ductwork. The Multi-Weathermaker System permits air conditioning in one area while the System is shut off elsewhere.



Q. What makes this System new and unique?

A. The Master Plan, which co-ordinates installation of individual Weathermaker units in one integrated System — not a hodgepodge of unrelated “packaged installations.”

Q. How is the Master Plan applied to an average office building?

A. First, a survey determines the cooling capacity required to air condition the building. Then, zone by zone, the Plan pinpoints the location of individual Weathermaker units required to handle the load. In addition, to simplify the installation of utilities from cooling tower to Weathermakers, the Plan provides a unique central Utility Core that houses the cooling tower supply and return piping, drain piping and electrical service. These utilities are sized to service all of the Weathermakers that will ultimately become part of the Multi-Weathermaker System.

Q. How many Utility Cores are required in a building?

A. In an average building, usually one. In larger buildings, several are required.

Q. How does the System's flexibility apply to installation and financing?

A. If financing is available, the System can be installed all at once. Otherwise, it can be installed in predetermined

sections step-by-step — an area, a floor or several offices at a time. In this way, financing can be conveniently spread over a period of years.

Q. Does “low-cost” apply both to installation and operation?

A. Yes. Here's why: Weathermaker units are relatively low in cost and inexpensive to install. They operate only when needed, so operating costs are strictly controlled. They're as easy to turn on and off as an electric light, so the expense of hiring an operating engineer is usually eliminated. Because of Carrier quality, service expense is minimum. And the System offers substantial tax advantages.

Q. How quickly can a System be installed?

A. That depends on the building. And whether you want to install it all at once or step by step. In general, it's fast. All work can be done during regular hours without interrupting routine. And once the Utility Core is installed, individual units may be moved about and connected wherever they are needed to meet a temporarily increased heat load.

Q. What does a Weathermaker unit look like?

A. We've shown four here in commercial and industrial installations. More are shown in the 24-page booklet on the System. We'll be glad to send you this on request. We think you'll find it interesting and helpful.

Carrier

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*Reg. U. S. Pat. Off.

reviews

(Continued from page 200)

a monumentally awkward kind of furniture "honestly" fastened with wooden dowels instead of nails. The arguments of the prophets of modern design, stressing suitable use of materials and expression of function, sound surprisingly unchanged today. In each case, the hope of the eleva-

tion of mass taste flew from Pandora's box briefly, brightly, but with ultimate futility.

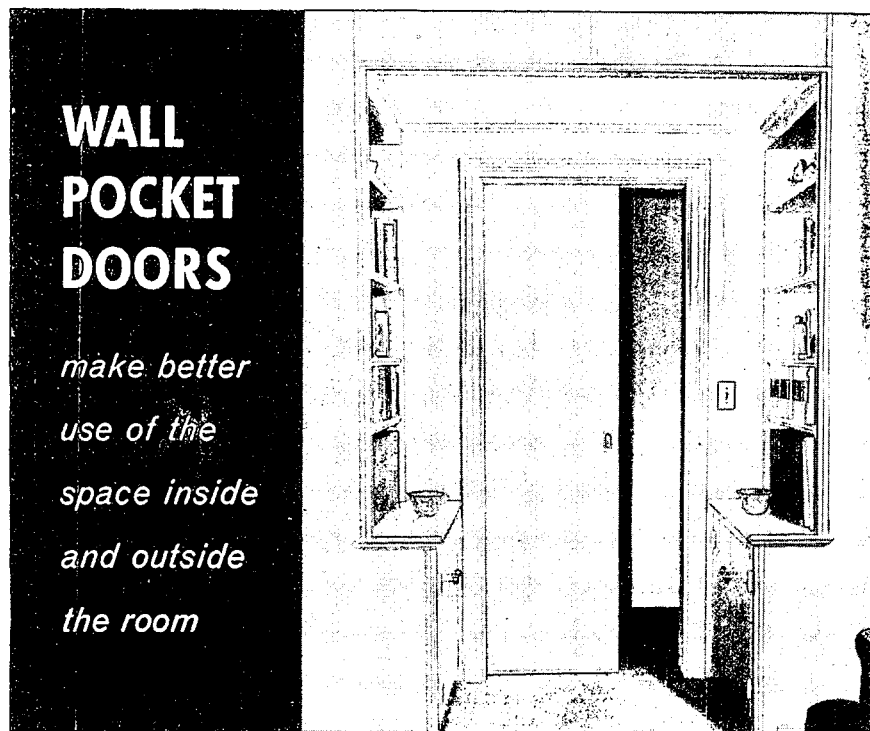
If the history of taste in America has been a cycle of pretention and caprice, are we any better off today? The Modern Movement has staged a remarkable half-century crusade to improve public standards, preaching its sermons in the name of propriety and art. Now that the architectural revolution is a *fait accompli*, has the

missionary zeal of its promoters successfully substituted the unadorned elegances of the contemporary style for the excesses of the Victorian Age? The sad truth is that, faithful to the well established pattern, new abuses are being substituted for old; the clichés have already set in. The intellectuals of today revere correctness above creativeness; with minor variations their houses are carbon copies of approved, museum-sponsored models; interiors are remarkably alike, since the same furnishings, pictures, bits of statuary, odd arty pots, and the inevitable hi-fi are to be found in all. On another level, our suburbs are a marvel of contemporary gimcrackery; if gingerbread has been eliminated, factory-weathered shingles and artificial stone combine with corrugated siding and whitewashed brick in a busy caricature of modern design.

Nor does the architect, dedicated man that he is, stand much of a chance in the present scheme. The forces working against him for control of the public are too many and too strong. Taste today is in the hands of one of the most powerful pressure groups of all time. In our overproduced economy, the forces of advertising and merchandising guide the major processes of creation—determining all forms of useful and decorative design—with one ultimate aim: to achieve the biggest potential "sell." The sales-inspired "streamlined baroque" of the industrial designer has penetrated every aspect of our physical lives, and the designer himself has discarded all sense of esthetic obligation in favor of the kind of blatant commercial styling that is based on the pseudoscience of consumer surveys and motivational research.

The picture today—without benefit of charts and graphs—is all too clear. Modern man is seated behind his picture window, relaxed in his womb-chair, or relieving his tensions in the more impressively upholstered Lounger. Depending on the "purity" of his tastes, he is surrounded by walls of stark white and blue, or the

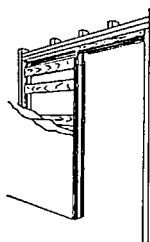
(Continued on page 212)



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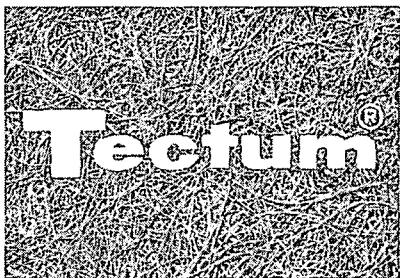
OUR CATALOG IS IN SWEET'S FILES

John Sterling Corporation

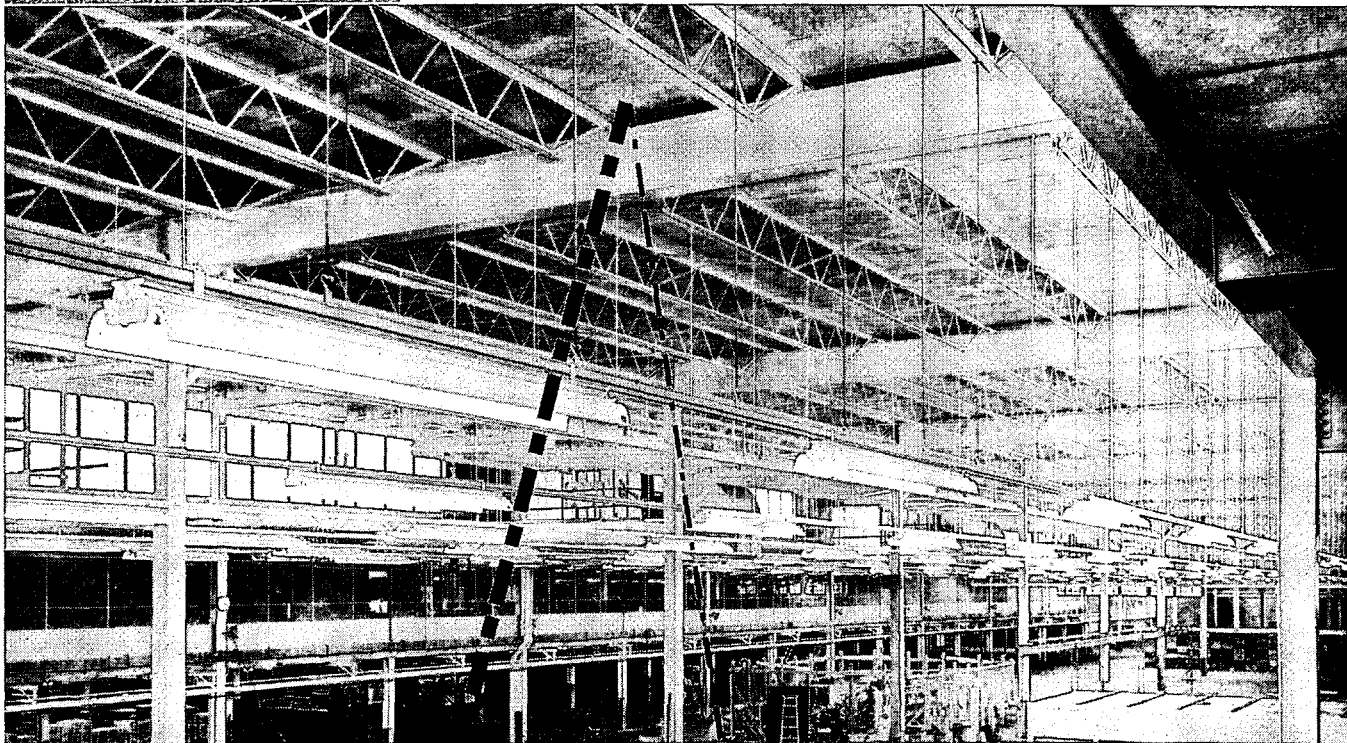
RICHMOND, ILLINOIS

(McHENRY COUNTY)

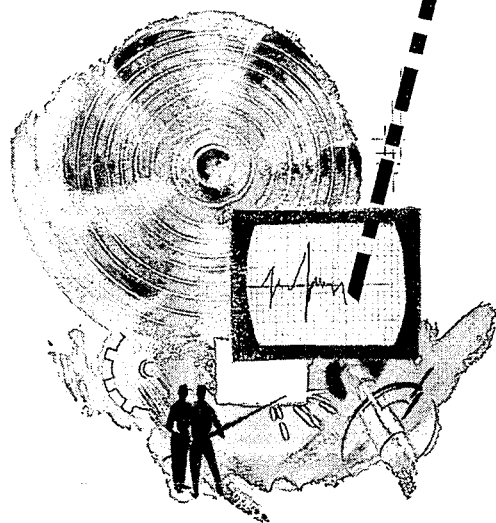
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reviews

(Continued from page 206)

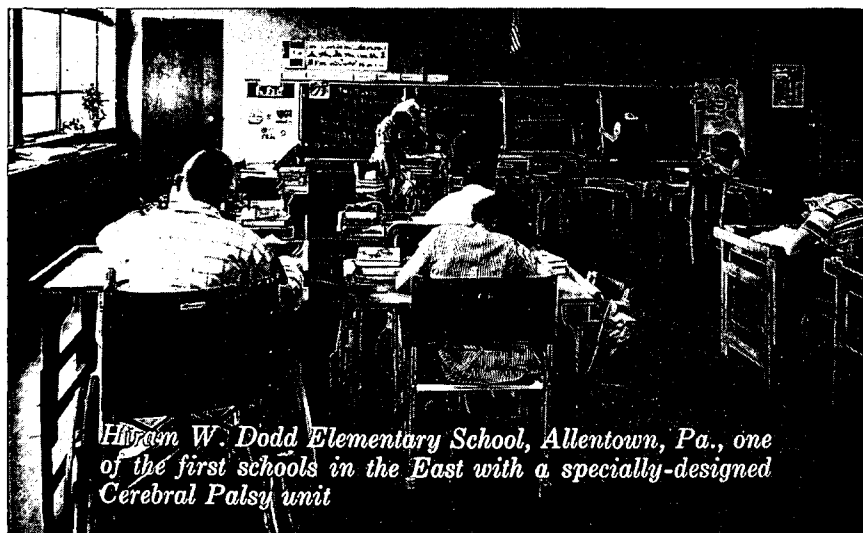
less sophisticated but equally chic Saffron, Cantaloupe, and Siamese pink. His kitchen is equipped with an impressive array of appliances with complex, glittering dashboards suggesting the possibility of a not-too-distant rocket trip to the moon. His packaged foods project appetite

appeal in strong, come-hither hues that might be considered, by the more querulous, offensively garish.

The highbrow lives smugly with his safe, stock-version of the *avant-garde*. The middlebrow is completely furnished and serviced by the oppressive mediocrity of brand names. The lowbrow lives in contented chaos. The question is, where do we go from here? What new crusader will arrive to deliver us from the deadly

sterility of esthetic conformism on the one hand, and the deliberately depraved idiocies of commercially promoted design, on the other? And if such a savior does arrive, what convincing moral arguments will he bring, to be transformed, in turn, into another set of disappointing clichés? We can only wait and see, and hope that Russell Lynes will continue his delightful documentation of the process.

ADA LOUISE HUXTABLE
Author, *Architecture Historian*
New York, N. Y.



Hiram W. Dodd Elementary School, Allentown, Pa., one of the first schools in the East with a specially-designed Cerebral Palsy unit

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basic text

Handbook of Layout and Dimensioning for Production. Hyman H. Katz. The Macmillan Co., 60 Fifth Ave., New York 11, N. Y., 1957. 479 pp., illus. \$15

Macmillan offers a new textbook stressing practical, industry-defined layout and dimensioning requirements in engineering drawing. Each step in product design development is illustrated and detailed, always underlining the ultimate goal of industry—efficient mass production.

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best seen and not read

The Pelican History of Art. Edited by Nikolaus Pevsner. Volume Z11. Greek Architecture. A. W. Lawrence. Penguin Books Inc., 3800 Clipper Mill Rd., Baltimore, Md., 1957. 327 pp., illus. \$12.50

There are two approaches to the writing of architectural history. One is the academic report in the tradition of 19th-Century scholars which tabulates conscientiously those facts that are substantiated beyond doubt by archeological evidence. The other approach is that of the interpreter who deducts from visual evidence cross-influences and socio-esthetic implications, bearing on the lives of those who built, used, and inherited man-made structures. Professor Pevsner, editor of *THE PELICAN HISTORY OF ART*, has chosen his authors exclusively from the aca-

(Continued on page 216)

another

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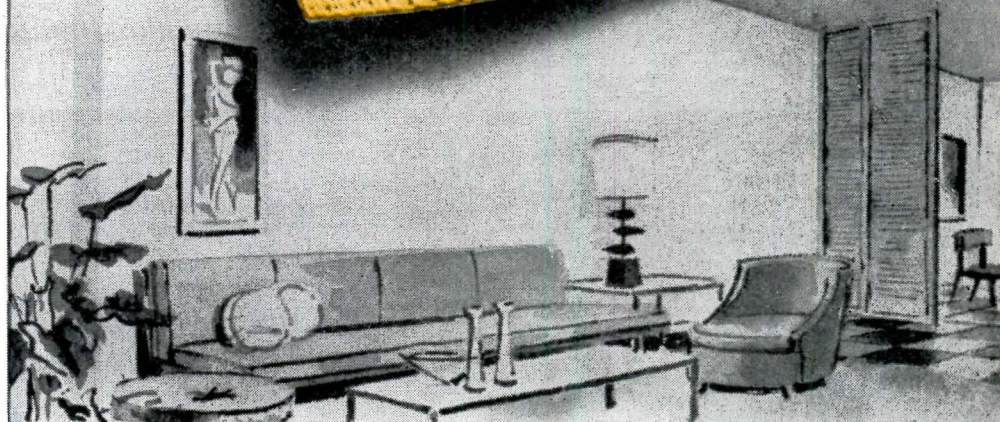
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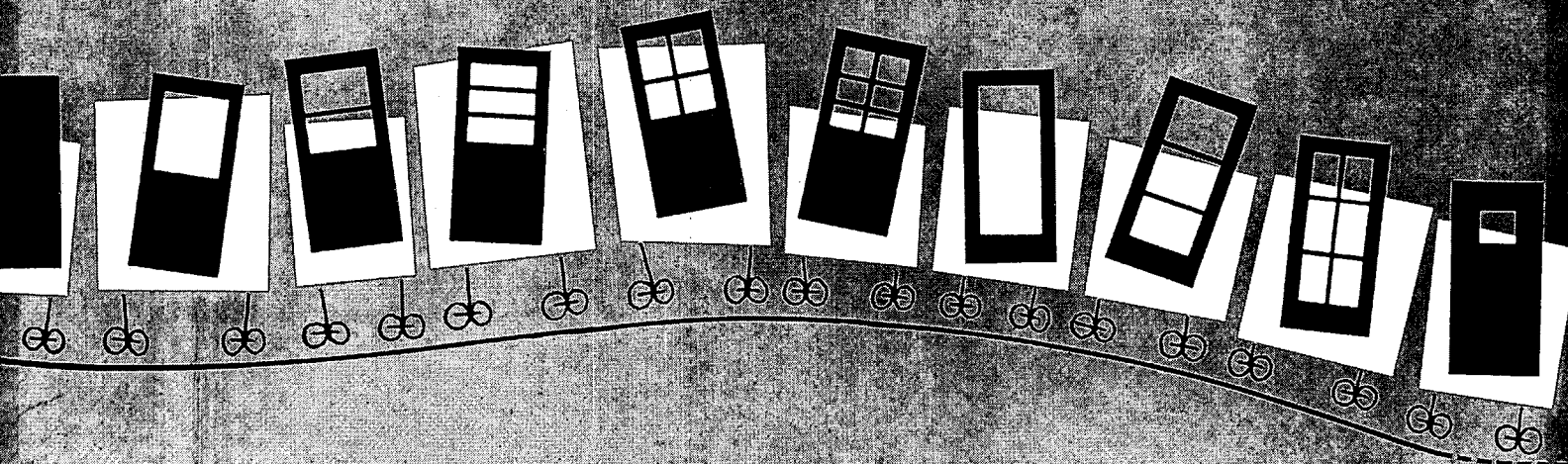


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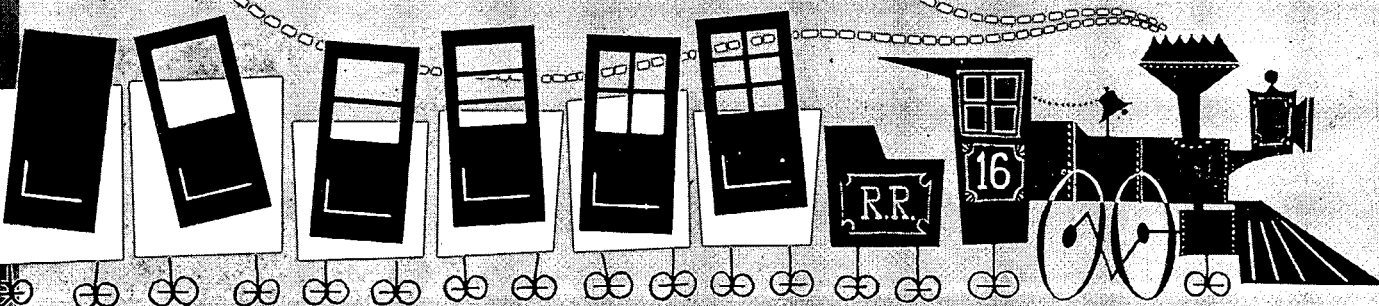
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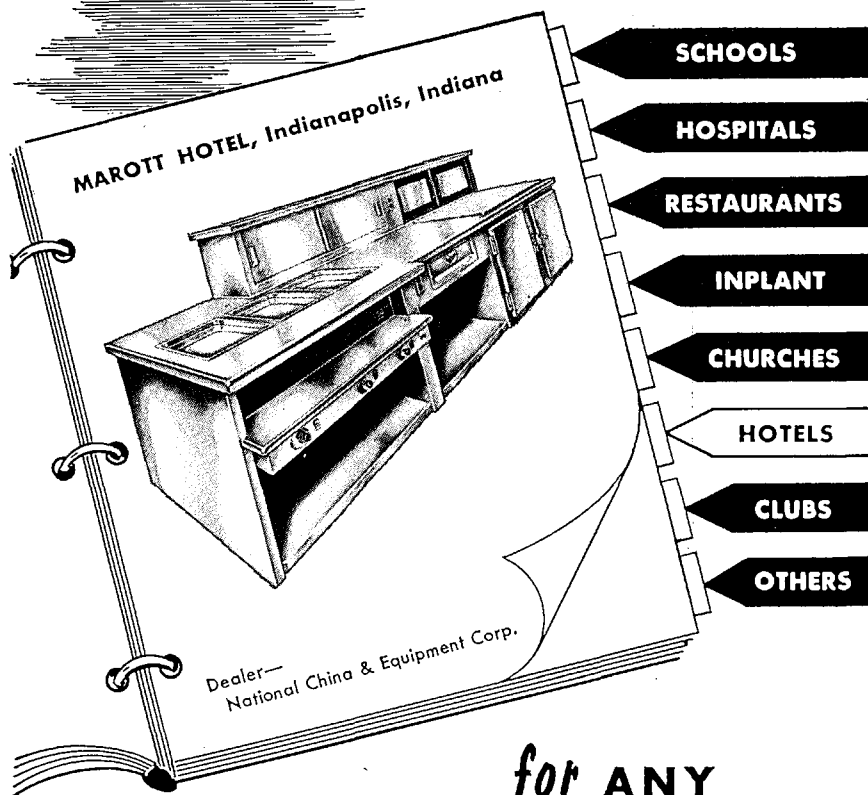
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reviews

(Continued from page 212)

demic viewpoint. The result is unimpeachable from a scholastic standpoint but uneven as to reader gratification. Historical styles with rich visual evidence supply an abundance of architectural interest: the architecture of India, of Renaissance France, and now of Greece. Scarce archeological remains, which might have great importance as stepping stones for cultural and esthetic developments, shrivel under the purely descriptive treatment to a handful of dead stones: the architecture of Russia, Medieval England, China. The latest volume in the *PELICAN* series avoids most gratifyingly a much deplored shortcoming of earlier titles. It concentrates on *secular buildings* and supplies visual material that has been missing in earlier accounts. This offers valuable insights for the modern architect. From Greek temples we can gain renewed *inspiration* toward simplicity, logic, and refinement in a highly selective environment. The Greek dwelling, on the other hand, offers new and exciting aspects of domestic planning. The Palace of Tyrins, for example, now 3400 years old, combines in a most ingenious way the axial approach to the great hall (megaron) with expedient groupings of apartments and service rooms around interconnected minor courts. A provincial house from Dystus translates the Greek genius for dramatic movement through architectural space, so brilliantly evident on the Athenian Acropolis—and in the current volume confirmed by the oblique layout of the Agora at Assos—on a human scale. The entrance porch invites and restrains by fanning out into the street and narrowing toward the domestic sphere. Three successive turns of the human body, supplying three different visual experiences, are needed before the wide inner court with the open-fronted main hall is reached. The much reproduced gridiron plan of

(Continued on page 220)

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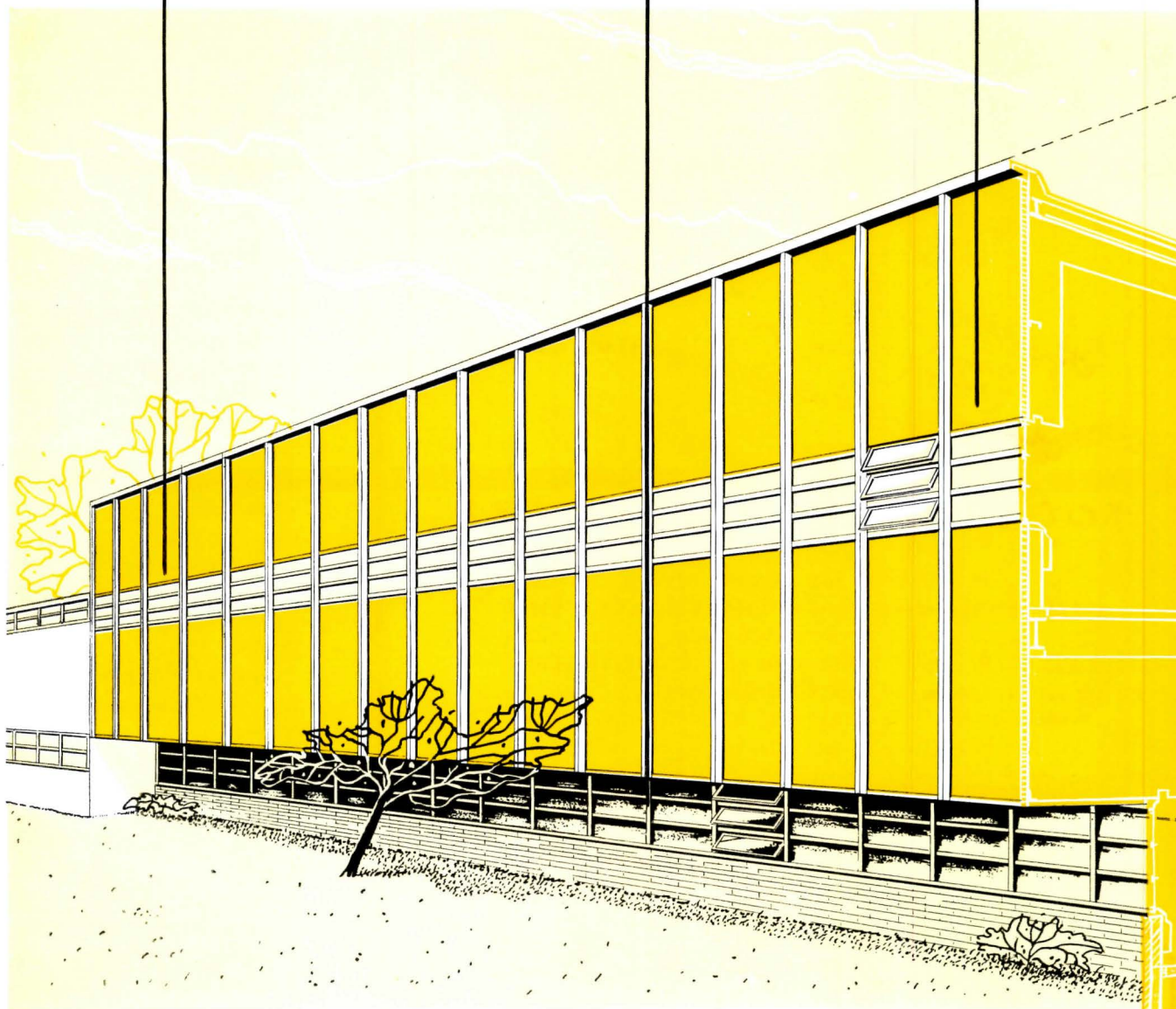
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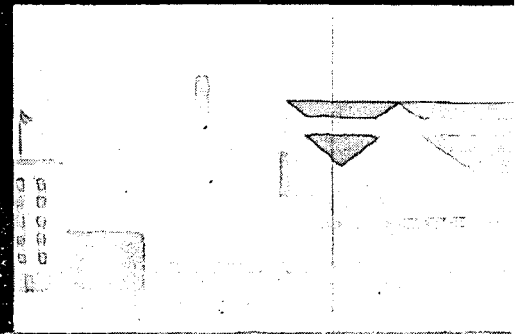
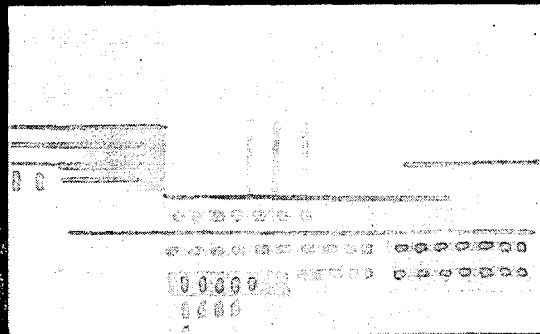
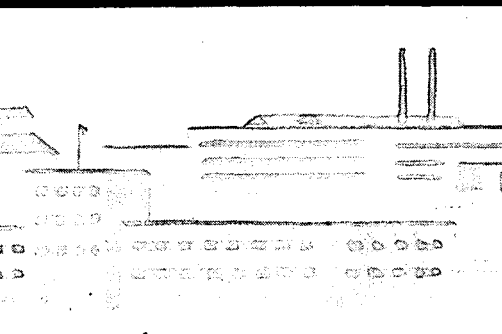
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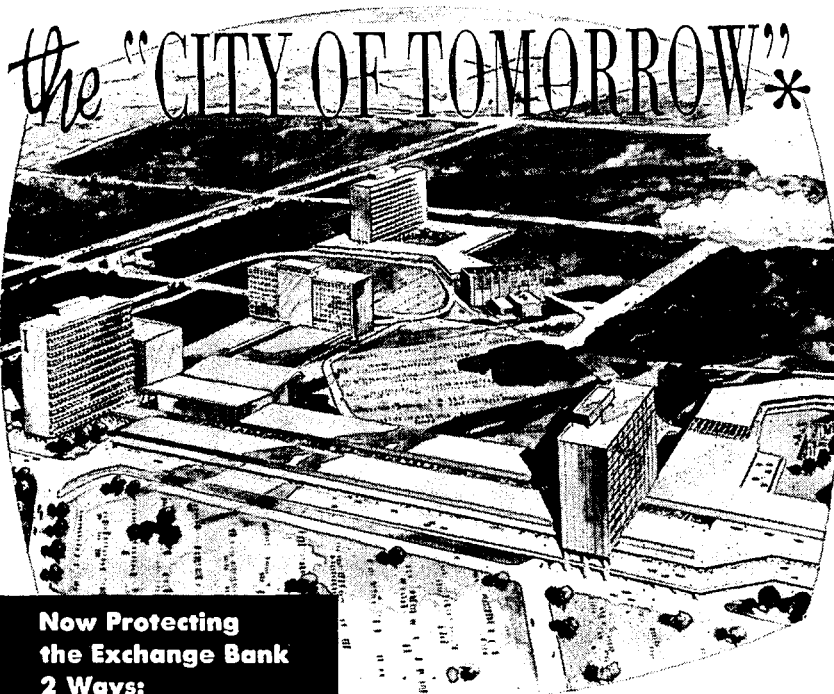
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reviews

(Continued from page 216)

Olynthus is here supplemented by detailed house plans, confirming variety-in-unity as the common denominator of Greek town planning. In spite of two invariable spatial elements—atrium and square room layout—each house on the uniformly cut gridiron blocks is different: a magnificent expression of the fierce Hellenic sense of individuality.

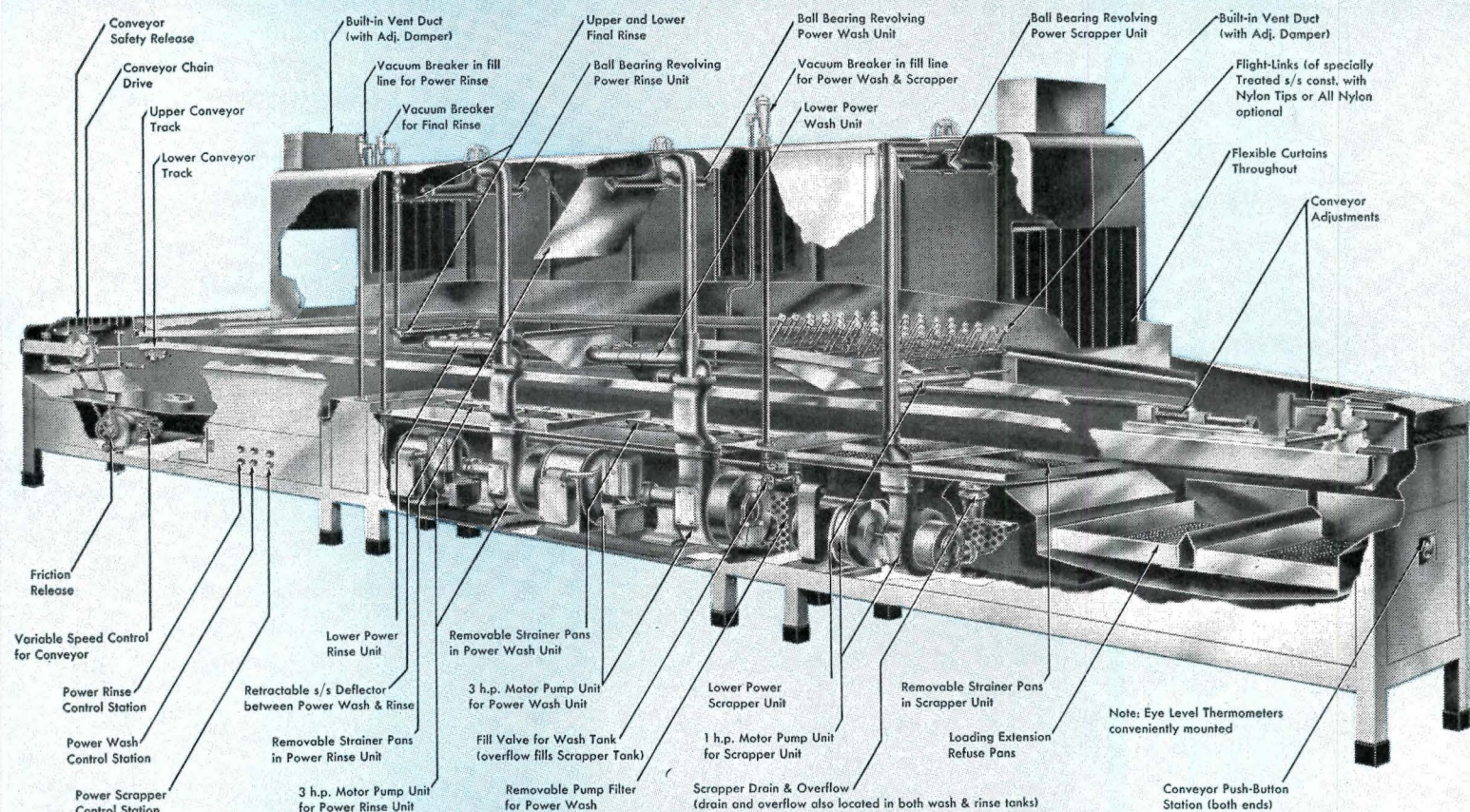
A surprise is Lawrence's report on Greek baths, which remain undemonstrated in other publications. There is an extremely handsome unit of two circles in a squared establishment from Oenidae and an elaborate compound from the Greek settlements in the Crimea, proving that the Romans based even their *thermae* on Greek prototypes. The other unexpected find in the *PELICAN* volume is an excellent pictorial report on Greek fortresses and walls. We are so used to identifying Greek architecture with the attenuated perforations of peripteral temples, that the massive strength and high craftsmanship in ashlar masonry adds a new appreciation to Greek building genius. Some of the fortresses, notably Messene, equal the finest stone work of the Incas.

The question posed by Professor Lawrence's book is whether architectural histories should only be looked at, or also read. As a visual report, his contribution is excellent: as text it is bewilderingly inadequate. In his anxious insistence on proved evidence, he omits all cross-references to sources of origin. He denies the Danubian roots of the Hellenic tribes by labeling all basic building forms as "origin unknown," although there exist such illuminating analogies as Celtic beehive tombs, with dromos in prehistoric Ireland (New Grange); the grave circle of Stonehenge, resembling closely the grave circles of Troy and Mycenae; the megaron plan of Neolithic lake dwellers (Lake Constance) north of the Alps; and the persistence of the

(Continued on page 222)

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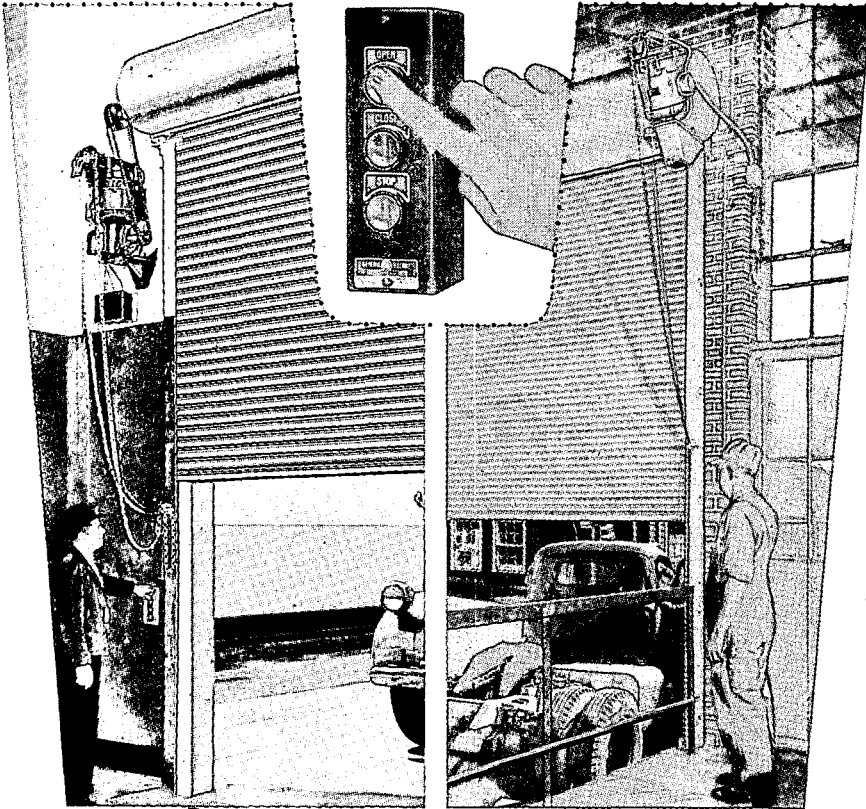
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reviews

(Continued from page 220)

chieftain's hall as central feature of the settlement, which is a most *un-Asiatic* tradition. Wherever Professor Lawrence does not describe with scholarly precision the evident structure, he relies on two standard works, familiar even to undergraduate students of Greek architectural history and therefore hardly new: the *English Handbook of Greek and Roman Architecture*, by Robertson, and the *American Architecture of Ancient Greece*, by Dinsmoor. To the latter, there are well over 80 references in the Notes. This lack of independence in the text seems puzzling, till one comes to the Epilog. Here the author not only reveals but also emphasizes his lack of sympathy with his subject matter. He insists that the Greeks are alien and incomprehensible to modern times and that "the spiritual gulf between the modern world and that of the Greeks" is much wider than he ever suspected. By way of proof, he warns us to envision the altar and the sacred precinct as filled with "the bellowing of frantic cattle, flies, blackening the widening carpet of blood, and a reek fouler than in any slaughter house." "The most cultivated citizens were liable to think in a surprisingly old-fashioned [*sic*] manner" — exemplified by a most naive appraisal of the Oedipus tragedy of Sophocles, and by the good Professor's incomprehension of Socrates' execution and the (magnificently ironic) last words of the sage. He concludes with a paragraph enumerating primitive religious habits, "hide-bound traditionalism and a frantic patriotism, constant and irrationally exclusive as the feelings of a school-boy." "The paragraph above," continues Professor Lawrence, who is an Oxford-trained professor of archeology at the University of the Gold Coast, "was actually written to describe present-day mentality in the West African bush but has required no modification except

(Continued on page 224)

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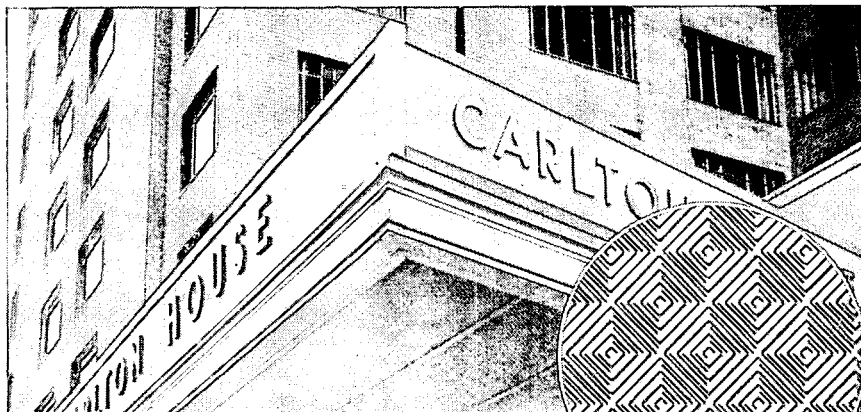
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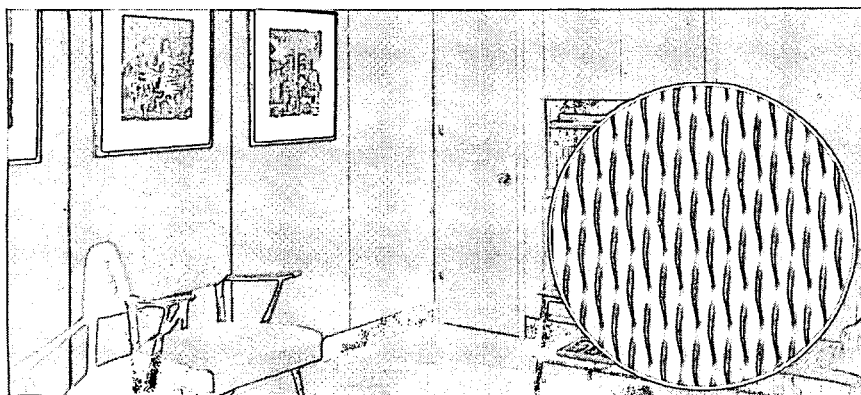
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reviews

(Continued from page 222)

a change in tense to make it applicable to the average Greek of the Fifth Century when an educated minority was already emancipated! It should apply in an intensified form to the preceding centuries. . . ."

This statement from an Englishman is ironical indeed, because it betrays not only a profound unconcern with the contributions of pre-Socratic philosophy and mathematics from Pythagoras to Empedocles, who were members of the Milesian and Southern Italian Schools, which meant a way of life; it also fails to comprehend (by way of the academic pin-point view) the achievement of the Hellenic world, against the background of early Iron Age Primitivism. The average Greek citizen met in free assembly to *approve and finance* the architecture and art of his time. There was no Semitic Hierarchy to decree cultural achievements. The temples, stoas, sanctuaries, gymnasia, theaters, and private houses, were as much expressions of Greek *society* and its standards as were the factory towns, the slums, and gingerbread villas of the Victorians. If Professor Lawrence insists on his unfortunate analogy with the West African Bush, it seems to us that an English fox-hunt where the participants smear each other with the quarry's blood, dripping from the severed tail; the parochial jingoism of the English middle class; and the inflexible adherence to outworn traditions "for the best of the state"—unmodified by great architectural or artistic achievements — are much more "primitive" than Fifth-Century Greece. We had once before this same congenital incomprehension of the Greek phenomenon, in Kitto's curious book, *The Greeks*. So one must conclude that it is imperative that the work of an English art historian, dealing with more complex societies, be best *seen* and not read.

SIBYL MOHOLY-NAGY
School of Architecture
Pratt Institute

Architect: Philip R. Soloway, Vineland, N. J.
 Consultant Designers: M. Saphier Associates, Inc., New York City
 Contractor: N. J. Post Construction Co., Oaklyn, N. J.
 Precast and prestressed concrete units manufactured and erected by:
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Precast concrete construction throughout . . .

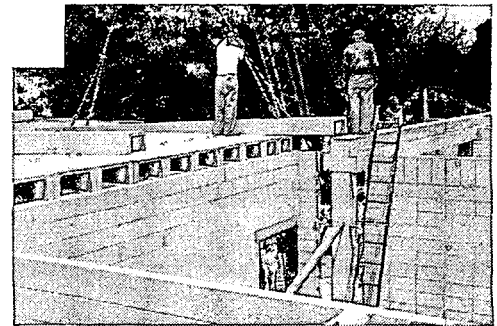
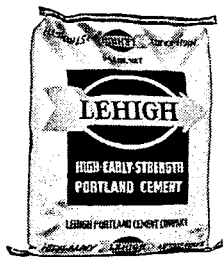
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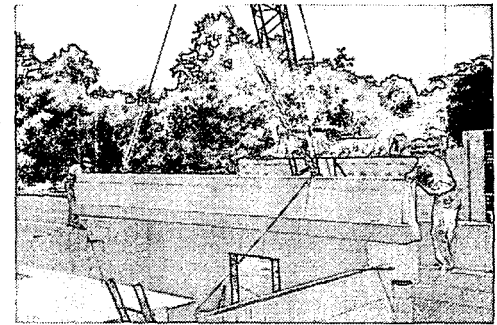
This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.

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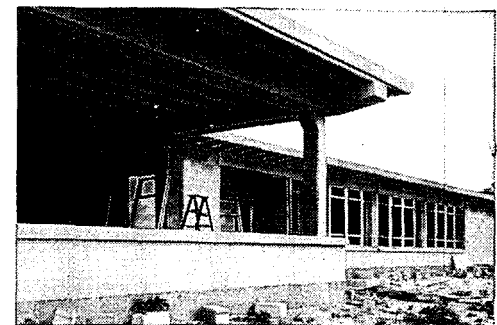
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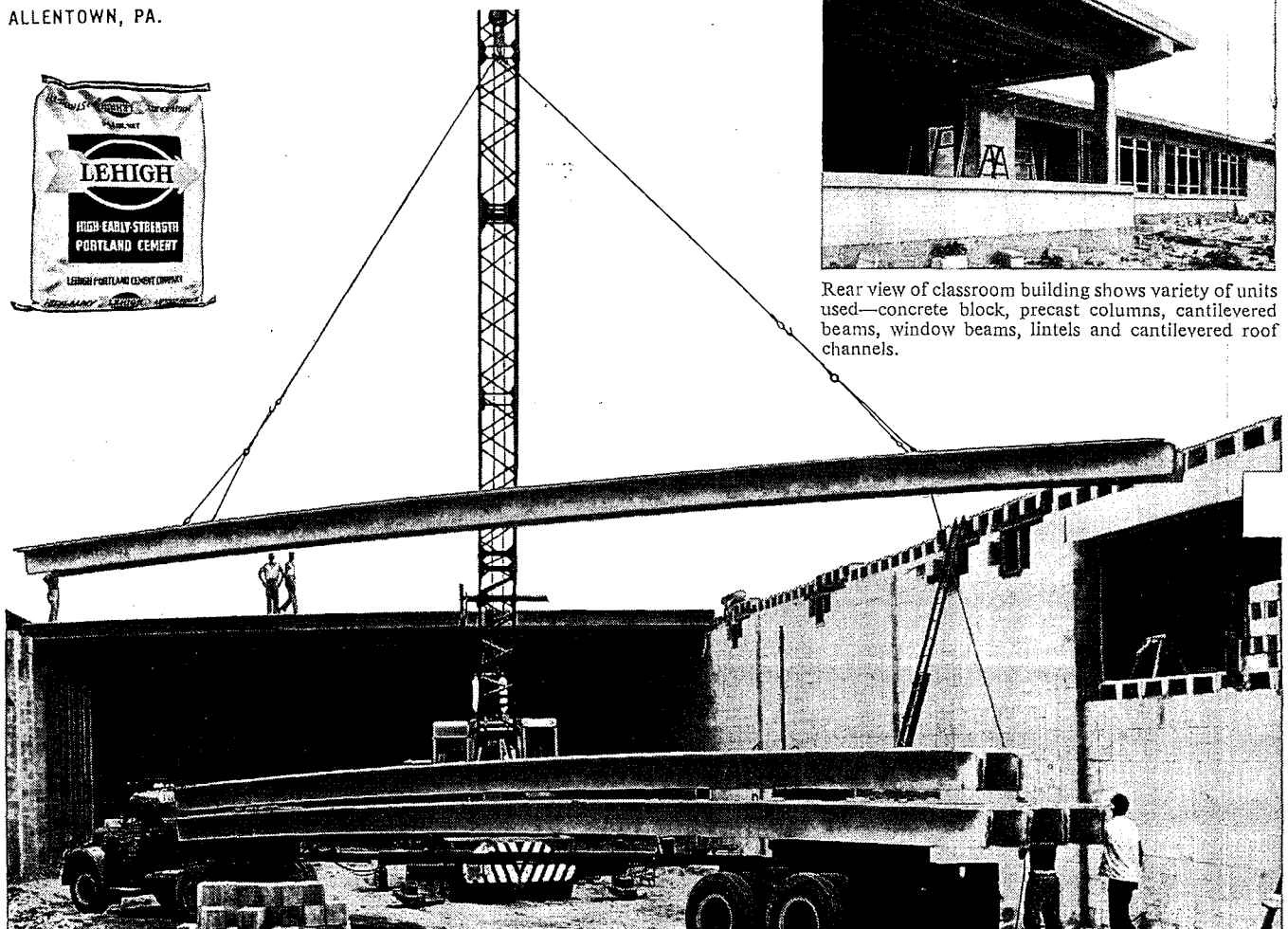
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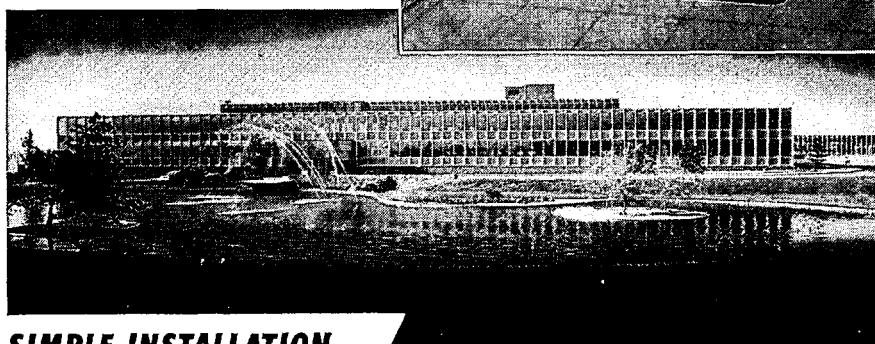
Rear view of classroom building shows variety of units used—concrete block, precast columns, cantilevered beams, window beams, lintels and cantilevered roof channels.



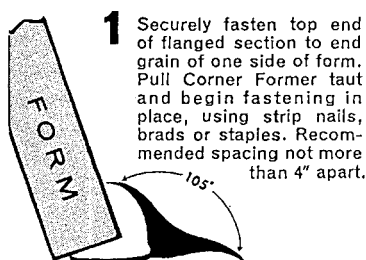
38 of these prestressed double tee roof beams (60' x 4' x 16") will form the roof of the synagogue.

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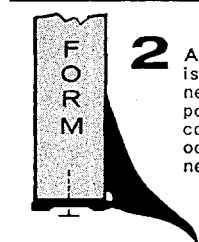
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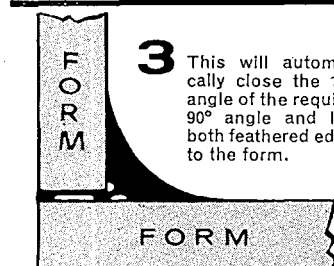
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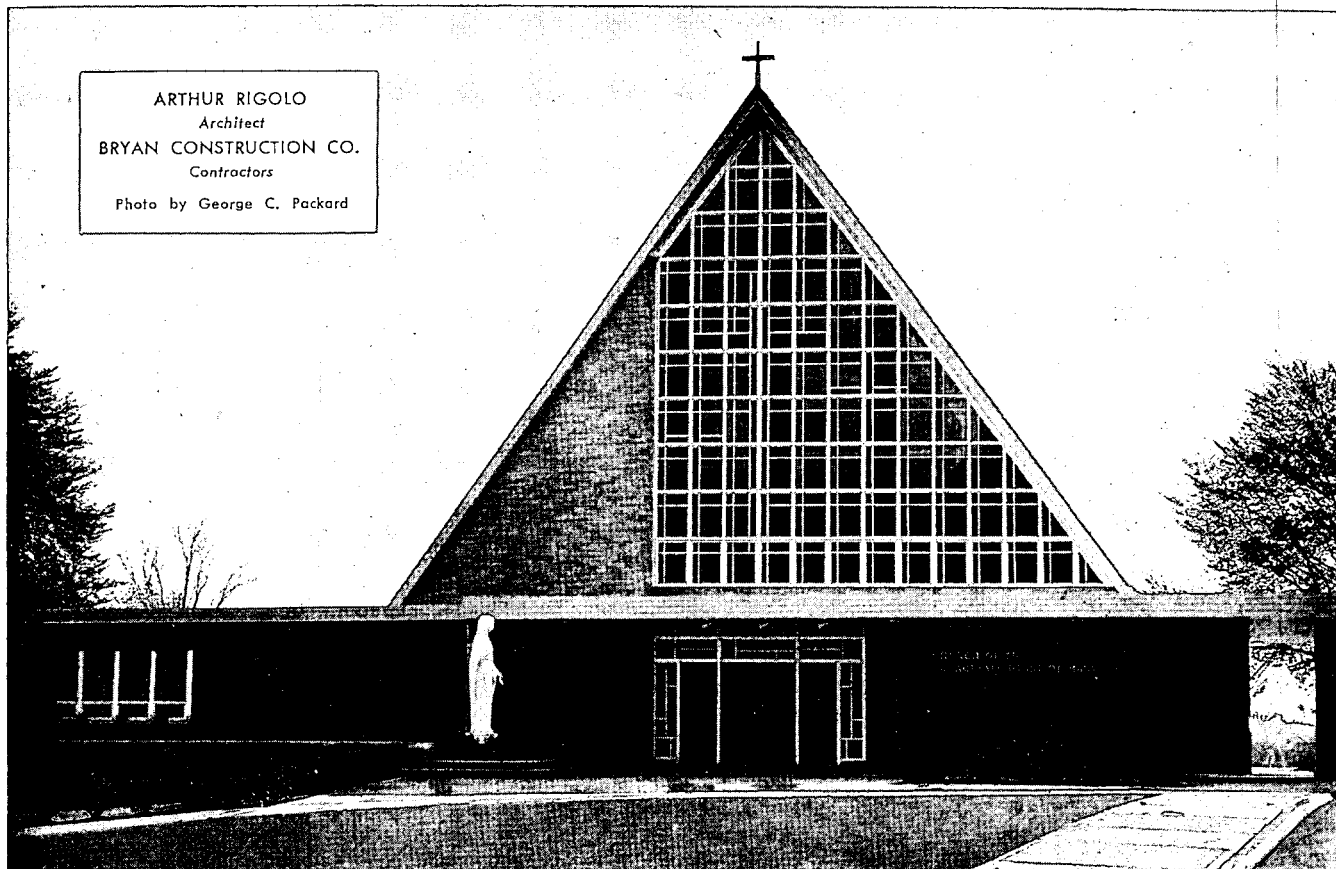
Foundation: reinforced-concrete column pads and perimeter grade beams. Structure: long-span framing, nailable wall framing, long span nailable arched roof joists—Stran-Steel Corporation, Division of Great Lakes Steel Corporation; floors: concrete slab on grade. Wall Surfacing: exterior: horizontal corrugated galvanized-iron—Great Lakes Steel Corporation, interior: vertical corrugated galvanized-iron—Great Lakes Steel Corporation; rest rooms: structural glazed tile—Natco Corporation. Floor Surfacing: plant area: hardened cement; cafeteria, administration engineering: gray and yellow vinyl tile; exhibition area, toilets: terrazzo. Ceiling Surfacing: exposed corrugated-metal vaults; suspended acoustical tile—Great Lakes Steel Corporation. Roofing: corrugated galvanized-iron on built-up gutters between vaults—Stran-Steel Corporation, Division of Great Lakes Steel Corporation; V-beam facing with protected metal finish on marquee—H. H. Robertson Company. Insulation: acoustical: suspended, perforated acoustical tile in administration area—Celotex Corporation; thermal: glass-fiber blanket between exterior and interior corrugated sheet metal—Owens-Corning Fiberglas Company. Roof Drainage: cast-iron leaders to interior of building from gutters between vaults, one galvanized-iron exposed leader from collector at each end of gutter—Great Lakes Steel Corporation. Partitions: plant and equipment area: lightweight, cellular aggregate blocks—The Waylite Company; passages, toilets, infirmary: structural clear-glazed blocks—Natco Corporation; cafeteria: vertical wood siding, sheet rock; offices: plywood—United States Plywood Corporation; cloth wall covering—The Chandler Manufacturing Company, Inc. Windows: steel projected sash—Truscon Steel Division, Republic Steel Corporation; glass and front: crystal sheet, corrugated-plastic plate glass and tubular aluminum—Pittsburgh Plate Glass Company; skylights: corrugated-plastic inserts meshed into corrugated-metal roofing—Corrulux Division, Libbey-Owens-Ford Glass Company. Doors: interior: hollow metal; entrance: tubular aluminum—Pittsburgh Plate Glass Company. Hardware: floor hinges, rolling door—Sargent & Company; casement—Oscar C. Rixson Company. Paint & Stain: interior: flat on gypsum board above 7'-0"—Paint Division, Pittsburgh Plate Glass Company.

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(Continued on page 230)

ARTHUR RIGOLO
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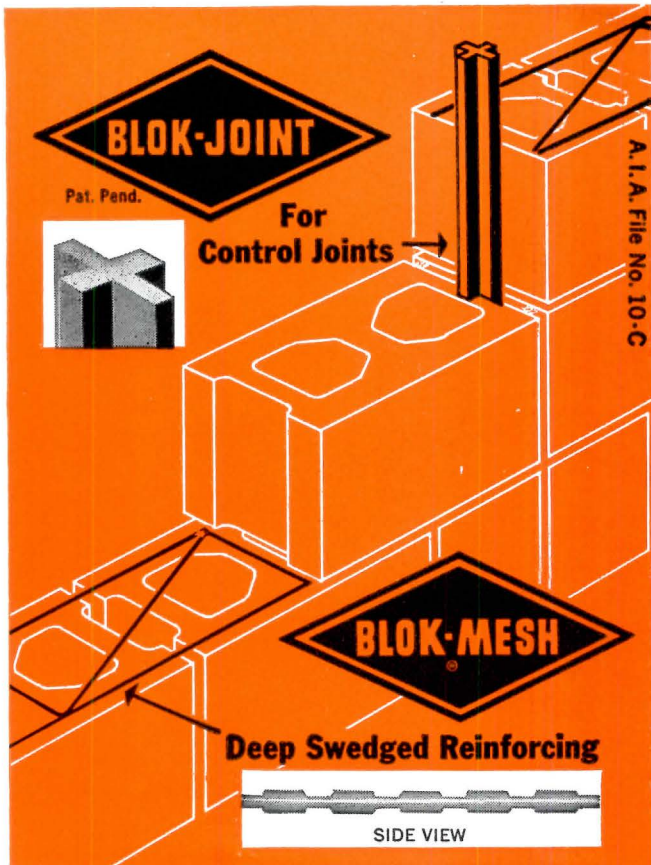
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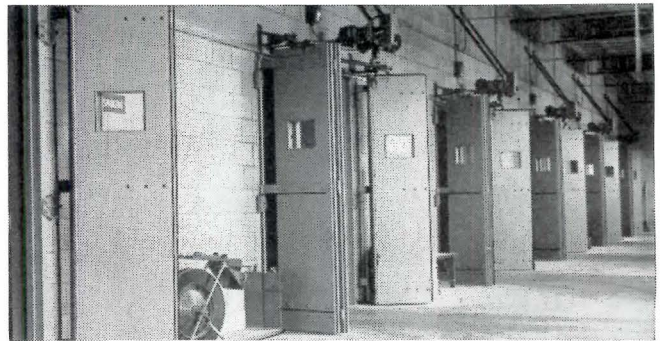


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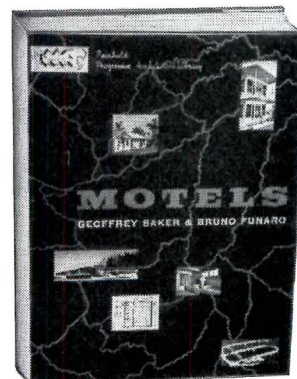
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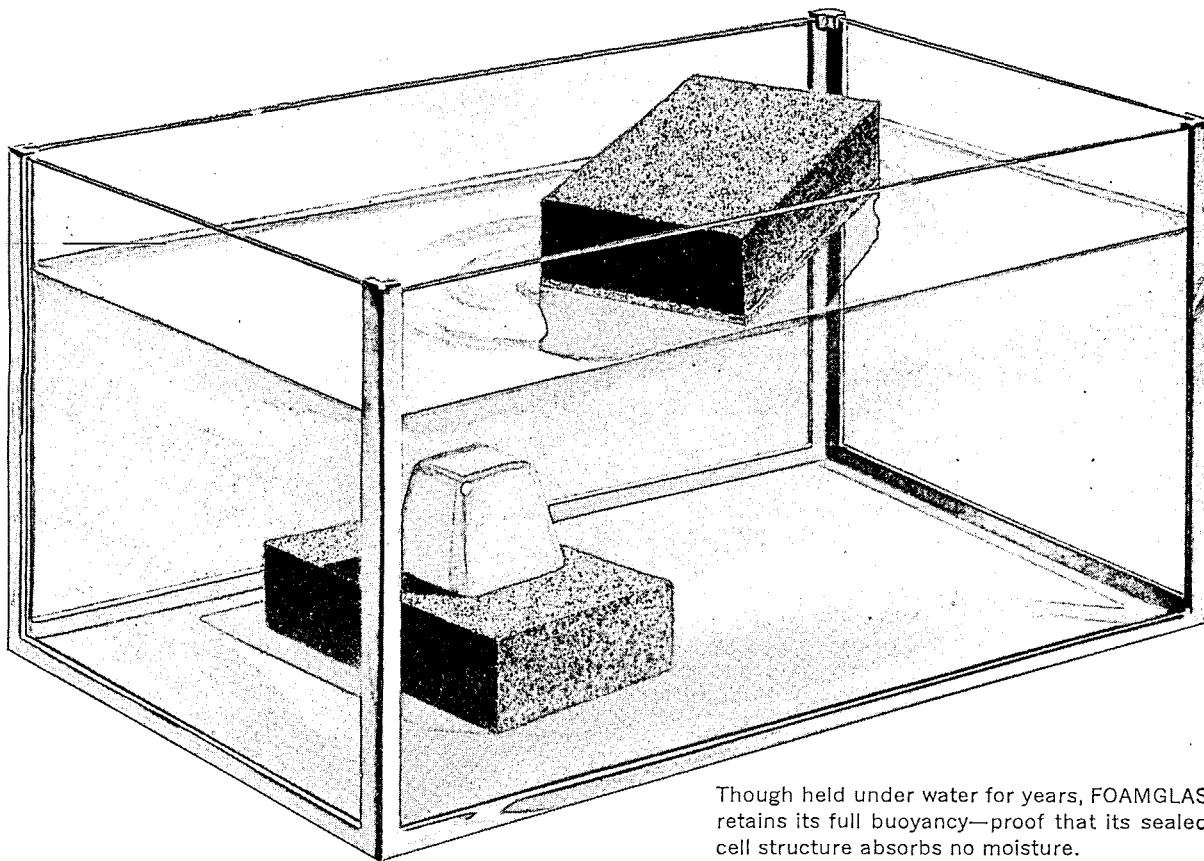


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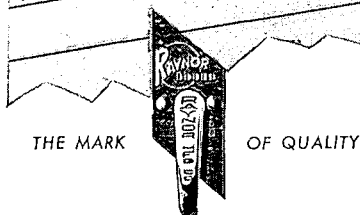


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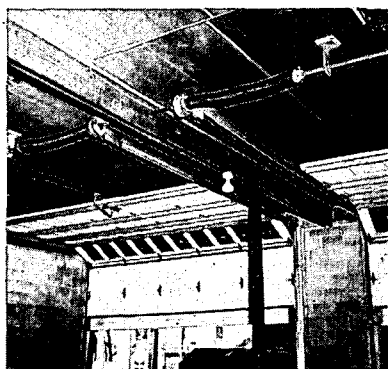
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installing an overhead
garage door on a flat-roofed
building where false ceiling
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installation*



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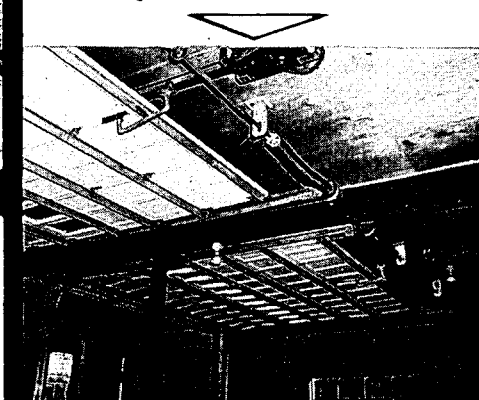
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(Continued from page 226)

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design & structure

(Continued from page 153)

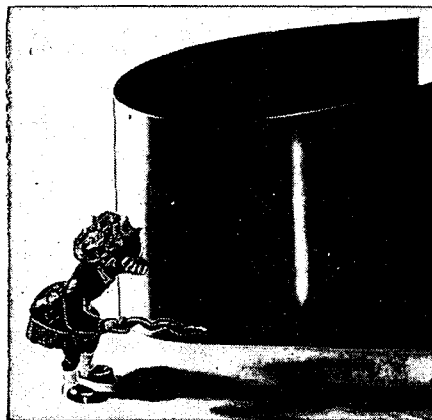
I believe that if we attune ourselves to a more sensitive understanding of the more subtle relationships between structure and form—if we conceive of design with structure rather than through structure—if we work together rather than borrowing from each other—we might evolve toward a relationship between structure and form that will have a far greater significance to the forthcoming architecture of our country than the occasional exuberant adoption of a barrel vault, a folded hip roof, or a daring prestressed cantilever.

I believe that it is important that we develop this more mature critical sensitivity and that we do so soon enough, because it is very likely that a major mutation in the forms of American architecture will occur in the near future.

The character of contemporary architecture, as it has become established over the last quarter of a century, does not, I believe, present an indigenous reflection of the country's standards of life and emotional tastes. As a style, in its emphasis on simplicity and sobriety, it is far more consistent with the standard of living and the limitations of modern Europe (in which changes and new elements of progress are developed in response to scarcity of materials and high costs of processing) than it is to our habits of plenty and our economy of induced ob-

(Continued on page 232)

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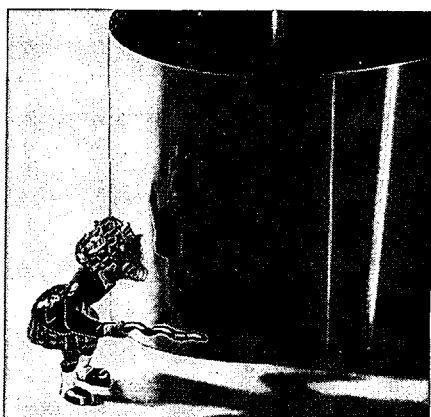
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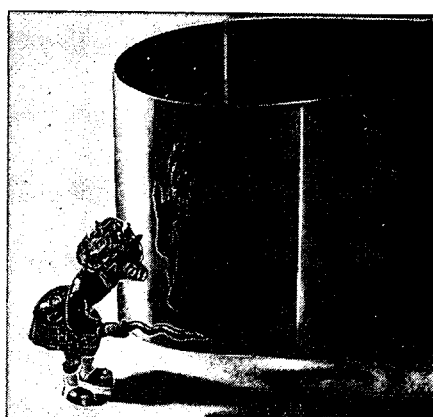
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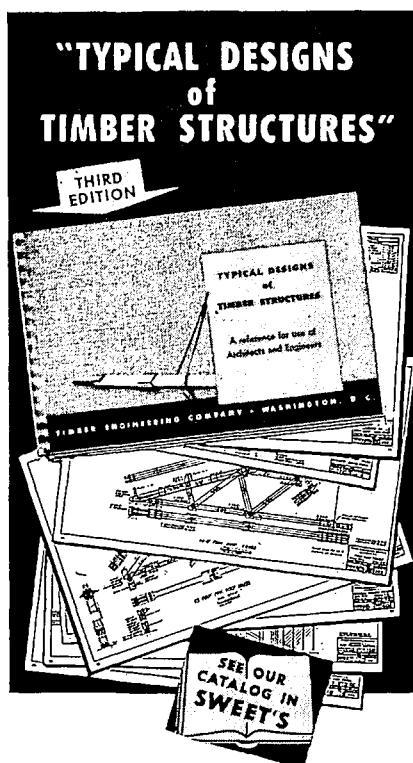


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design & structure

(Continued from page 230)

solescence.

Our tendencies, our tastes, our habits, all tend toward expressions of greater dimensions and imaginative potentials than contemporary architecture in America seems so far to have explored. In other fields, the tremendous difference of attitudes, tastes, and standards is clearly reflected; compare the American automobile or the American household with its European counterpart!

If the contemporary architectural movement has eventually gained acceptance, it is mainly as a "style," almost as a fashion, and very much because of its inherent characteristics of economy, which have been keenly appreciated by the developers, and have not been balanced by an expressed public demand for higher quality of environment. Yet we are now reaching a point where the demand for richer and more imaginative architectural environment is going to be felt. Already, with the creation of the new suburban centers, the taste for new nuclei of greater civic meaning is established; and the forces of competitive enterprise may well be coaxing into sponsoring such richer urban environments. At the same time, in the coming tasks of urban renewal, where large areas of our old cities are going to be razed and rebuilt, a tremendous potential for grandiose planning will be opened, and it is probable that a newly expressed assertion of civic pride might sponsor new forms for our city's cores.

Toward the birth of a demand for richer environment, the architect should be an eager coxer, a competent midwife, as well as a very prudent guide. These forces, if properly guided, may soon bring about a magnificent age of American Baroque, with all of the characteristics of imagination, grandiosity, and visual delight that characterized its classical predecessor, yet expanded to the benefit of all of the people. If, on the other hand, these forces are not properly guided, we may, in striving for the expensive and the plentiful, entirely bypass the baroque and plunge straight into an eclectic modern-day rococo—a molasses-like quagmire of environmental banana

(Continued on page 237)

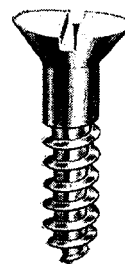
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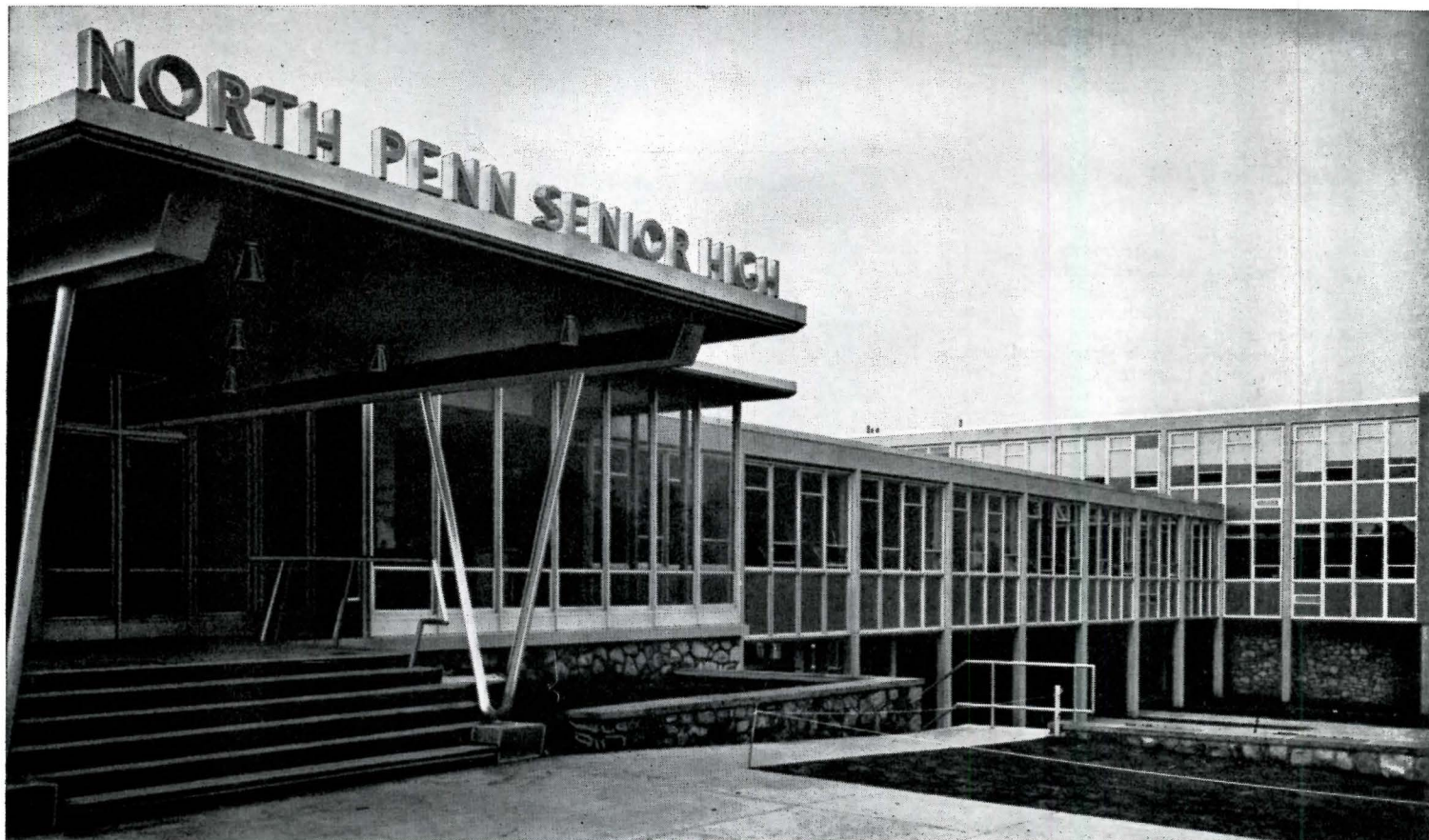
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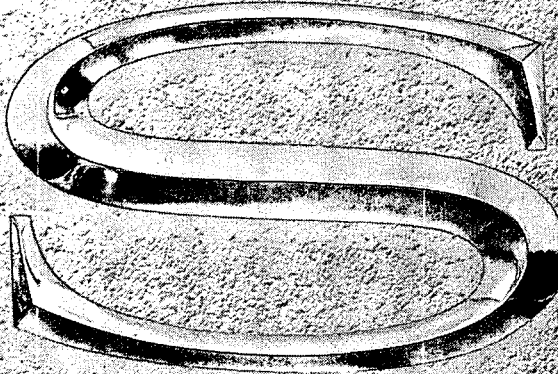
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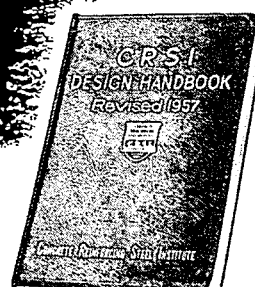
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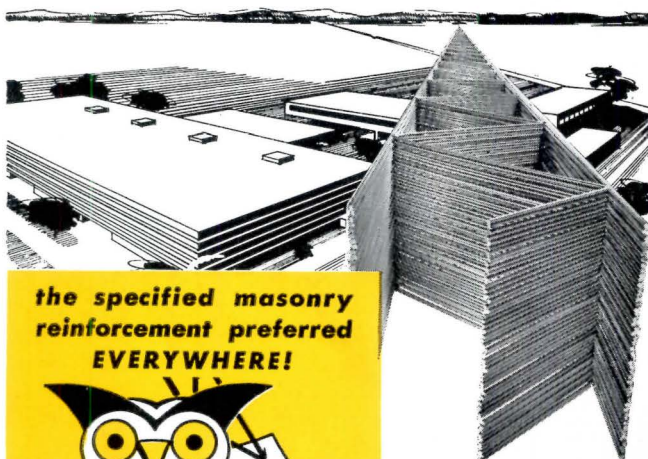
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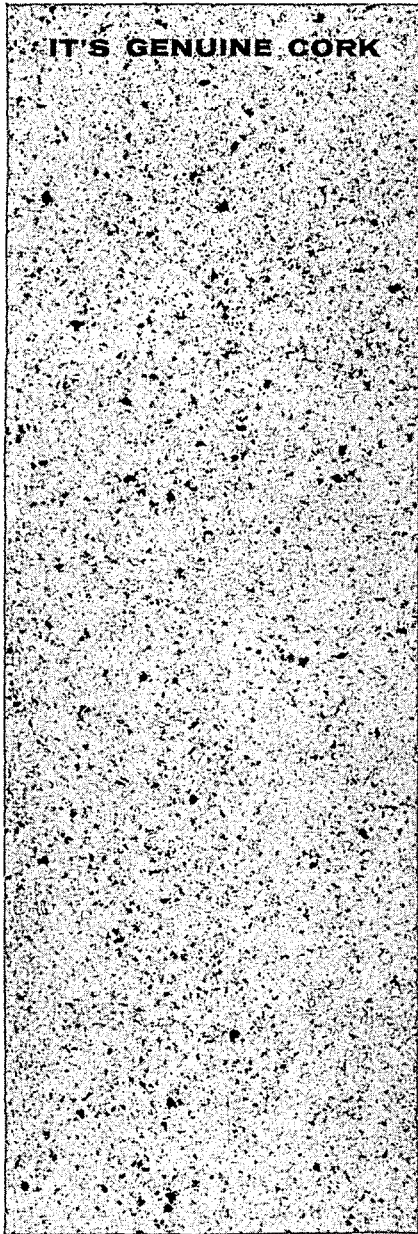
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design structure

(Continued from page 232)

splits. The evidence offered us by the automobile design and by the juke-box styling should stand as fair warning of the danger ahead.

The choice of direction that we, as a culture, may eventually take, to a great degree will be affected by the influence that the creators of design and the critics of design will themselves develop and be instrumental in transmitting to the people as a whole through available and new educational channels. In this sense, it is then important that the more mature sensitivity that I mentioned before be rapidly acquired, lest we be forever attracted by the new and the glamorous rather than by the maturely creative, and so that we might be instrumental in steering the future of our environment away from an air-conditioned nightmare of fin-tails, juke-boxes, and tricky structures, into a new architecture capable of extending the benefits of our physical wealth into its emotional and cultural counterparts.

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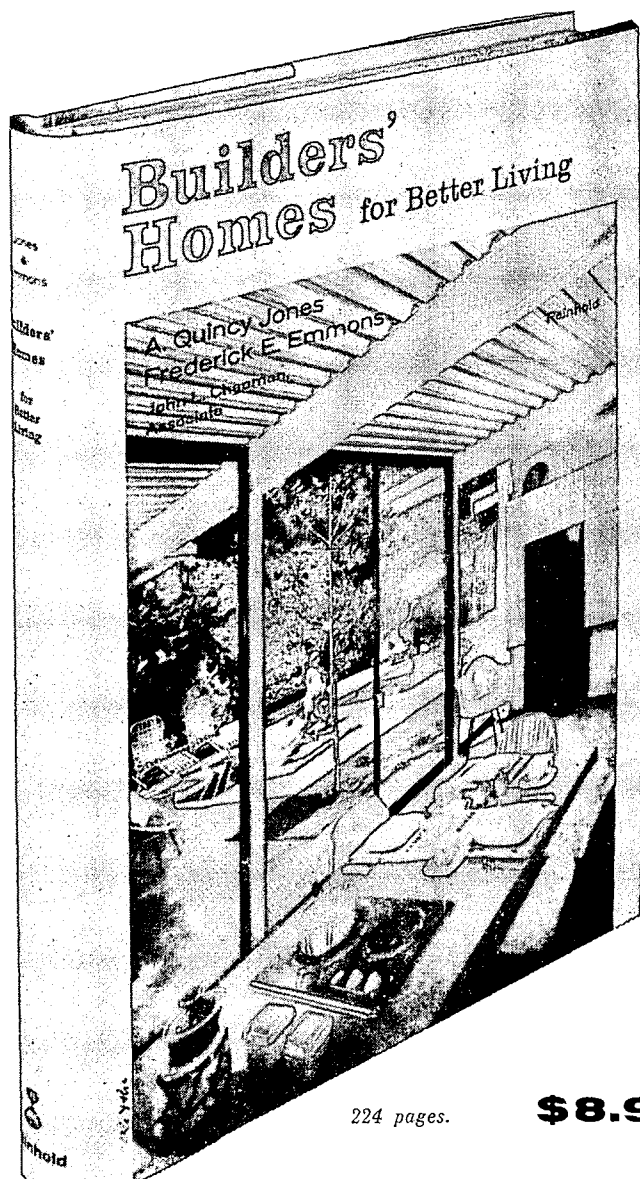
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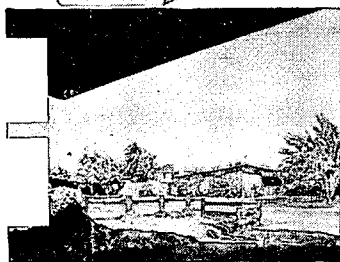
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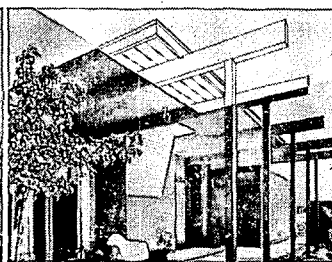
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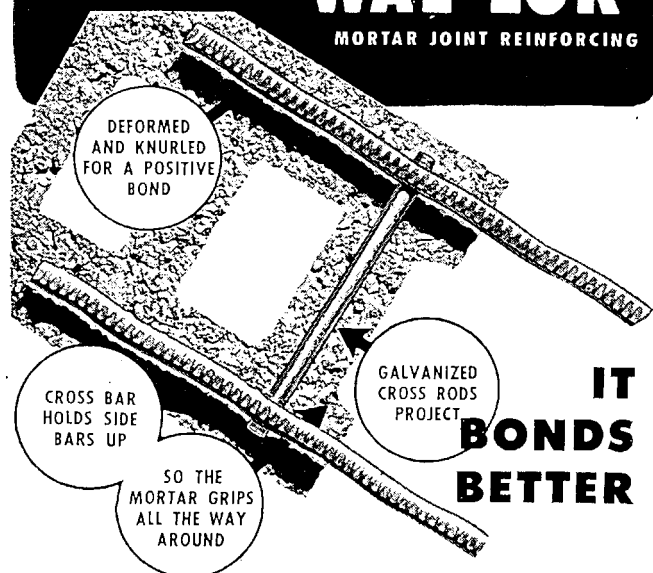
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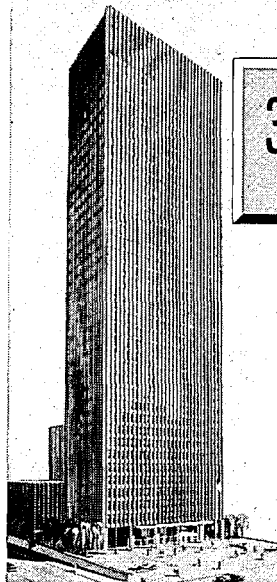
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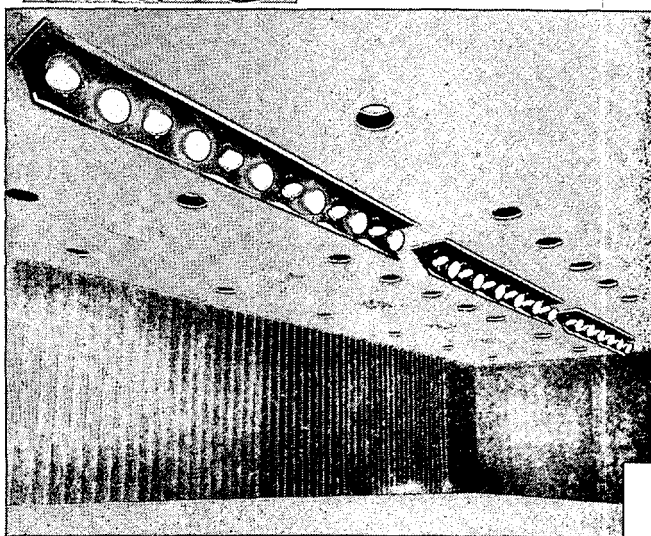
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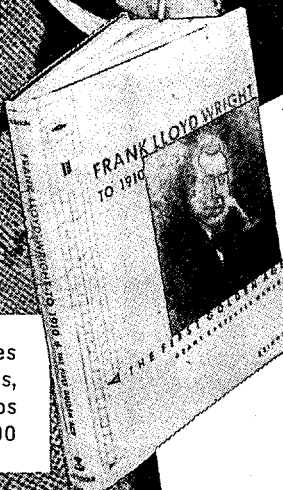
Most outstanding perhaps during this period was his conception of the PRAIRIE HOUSE. Brilliantly conceived, following few precedents, the houses evolved and flowed into such milestones in American Architecture as the WILLITS, COONLEY and ROBIE HOUSES. Also shown and discussed are the many precedents for non-residential architecture which Mr. Wright evolved, including UNITY CHURCH, the LARKIN BUILDING, and HILLSIDE HOUSE, now part of Taliesin North.

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prototype speeches

As I listen to talks on architecture—and make some of them myself—it occurs to me from time to time that we have become very limited in our after-dinner-speech approach to this field. Dean Henry Kamphoefner's paper at our Design Awards Presentation Dinner (see NEWS SURVEY in this issue) was fresh and refreshing in this respect. In general, however, there seem to be certain stereotyped themes, and we tend to be receptive to them or not, depending on our conditioned reactions to each of the subjects.

As I left one of the meetings at last year's AIA Convention in Washington, after a particularly able delivery of one of the familiar topics, a good friend said to me, "My, that was a wonderful talk! Why don't you publish it?"

And I replied, "We have, many times."

He was naturally feeling a strong sense of satisfaction at having heard words with a warm, familiar sound strung together in sentences that expressed long-familiar beliefs. If we *had* published that particular version he would not have read it again, but once more he would have felt pleased at seeing the familiar expressions in print.

This being so, why would it not be a good idea for the beautiful new *Journal* of AIA to publish, definitively, once and for all, these various prototype speeches, and give them file numbers? This would accomplish two things. In the first place, the need for long talks after ample dinners would be eliminated. The speaker could simply stand up and say, with proper emphasis: "Eight C!," receive whatever applause was due him, and sit down. The success of the delivery and the reception of the audience would depend on the sincerity (a quality cherished by advertising agencies and after-dinner speakers) with which the identifying key numbers were spoken.

Further, none of the other magazines would ever have to publish these speeches as articles, in full, after original publication and keying in the *Journal*. Instead of our publishing the one which argues that *we should use the machine as a tool and not become slaves to it*, we could simply give half a page to bold, beautiful typography of the symbol: *Three D*. And the competitive magazines could skip full publication of the comfortable old point that *we must distinguish between architecture and just plain engineering* by finding the best possible expression for the characters: *Two A*, or cover the explanation of *our responsibilities in broader planning* by a handsome presentation of the key: *Seven F*.

In case the idea should seem feasible, here are suggested outlines of the opening gambits of some of the readily-recognized and generally approved subjects.

First there is the *we have lost warmth and humanity in our architecture* approach. Ladies and gentlemen (*it goes*): in the last hundred years there has been a great change in the design of our buildings. Now in the face of that phenomenon we can take two attitudes. One is to look forward; that is known in the trade this year as *The New Century Beckons*, and was the subject of last month's talk. The other attitude is to look backward, which I denote as *The Old Century Beckons Some People, Too*. Has man lost his humanity; has architecture lost touch with the past? Who can find warmth and humanity in a steel-and-glass building? Have we lost forever the cozy humanity of the Egyptian pyramid; the warmth and intimacy of a Renaissance palazzo; the homeliness of a Roman amphitheatre? The uplift of an emotional experience is missing from our stripped modern buildings, and when a modernist adds the uplift of emotional experience to his buildings, I don't want to hear about it—because it disproves my point.

Then there is the one we might call the *techno-esthetic speech*. Ladies and gentlemen (*it starts*): what I want to talk to you about tonight is the influence of the erg on architecture. We have just finished a series of experiments at South Wabash Institute of Technology in which we weighed all the belongings of a family of two parents, three children, and a brother-in-law, divided the total, which we call the oppression factor, by the gravity acceleration of the food consumed during a typical 24-hour work-play-sleep cycle and, considering this the square root of the floor area of a desirable living unit, designed a prefabricated spaceframe. The lessons to architecture are obvious, at least to my students at the University. Thank goodness they aren't obvious to you, or I wouldn't be asked to make any more lectures.

The *reluctant-historico-nostalgic* talk is another. Ladies and gentlemen (*it begins*): one of the great faults in our contemporary architectural scene is our lack of understanding of architectural history. Now, none of us would like to see history studied for emulation—although what a glorious thing it would be to see our great cities like New York cloaked in the majesty that was Roman architecture—and none of us would like our students to copy directly from the classics—although

what a wonderful thing it would be if today's young rebels learned to draw the glorious acanthus and were taught the subtle sensuousness of an entasis. No one wants us to lose the great advances that have been made by our leading modernists, such as Paul Cret and Bertram Grosvenor Goodhue, but what an understanding of architecture was lost when the last man who could accurately full-size the moldings of a Gothic arch died at his board in Ralph Adams Cram's office.

Related to this is the *appeal for regionalism*. Ladies and gentlemen (*it might go in the Northwest*): here in this part of the country where you have barns, it seemed to me that we might discuss tonight the need for a regional approach to contemporary design. Recently during a lecture in New England, it was pointed out to me by a heckler in the audience that there are barns there also. I have even heard it rumored that there are barns in Ohio. Let us not be discouraged by irrelevant facts, my friends. These are *different* barns, discovered by different people. The Northwest barn was discovered either by Pietro Belluschi or by John Yeon, and I don't want to get involved in *that* argument again. The New England barn was discovered either by Carl Koch or Robert Woods Kennedy, as a result of which Koch developed the Techbuilt house and Kennedy wrote a book. Koch's royalties are greater than Kennedy's, I understand, but Belluschi makes more speeches than either. But let's forget barns; let's consider, instead, the separate ethnic backgrounds of the great American regions. There is the great Southwest, for instance, with its culture based on Hollywood movies and TV programs piped from New York night clubs. And there is the great Eastern industrial seaboard, with its culture based on Hollywood movies and TV programs piped from Southwest barn dances. Even with the spread of communications and technology, these regional differences must not be allowed to die; from them come invaluable architectural achievements such as the Long Island ranch house.

Maybe this isn't such a good idea after all. I have two speeches to write, and I suddenly realize that all of the fresh, original, and non-stereotyped approaches that I had planned would probably be covered in the keyed, pre-published talks I've suggested. I guess the whole thought is dangerous.

Thomas H. Coughlin